

NATIONAL FISHERMAN

JUNE

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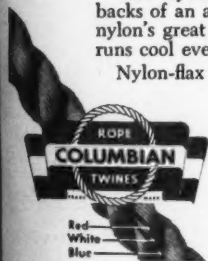
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JUNE

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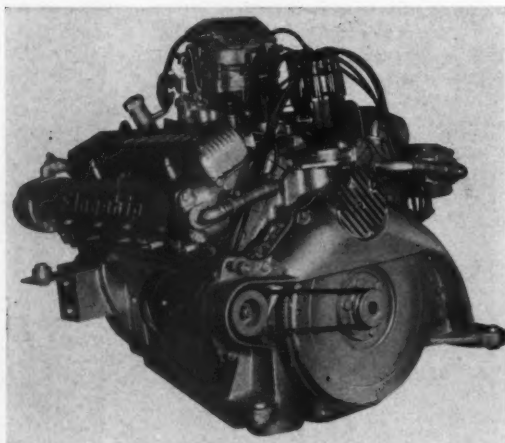
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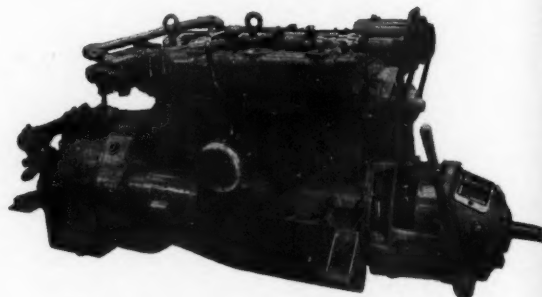
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The Lookout

Better Port Facilities

Expansion and improvement of harbor facilities is urgently needed to complement and encourage shore development and fleet expansion of the fishing industry. It is only natural that the industry will gravitate to ports where adequate, modern facilities are provided.

An example of the need for better conveniences is graphically illustrated by the New Bedford, Massachusetts, multi-million dollar fishing industry which has outgrown its long established facilities.

The 180 vessels in the fleet average 70 feet in length. But, there is only 728 feet of public wharf space in the city devoted exclusively to fishing boat docking.

Most of the boats tie up alongside the city owned piers, used mainly for unloading, or at privately owned wharves. The city owns two wharves at which fish unloading operations are conducted. However, nothing has been done by the city to create additional facilities.

It is not unusual to see boats, seven abreast, waiting out a storm. In that arrangement, they are highly subject to damage from wind and waves. Docking congestion also poses a potential danger from fire and explosion.

Congestion means difficulties in icing down and unloading. Usually a boat has to be shunted from one dockside to another site in order that the next vessel may tie up to take on supplies.

Point Judith, Rhode Island, reportedly the fastest growing port in New England, has a similar problem, brought about in a distinctly different manner.

Attaining her remarkable expansion because of proper and efficient facilities, the port has shown such rapid growth that these same conveniences are now inadequate.

Fishermen say a port must have sufficient unloading facilities to handle the fleet efficiently. They feel this attracts new buyers and more competition. This in turn would raise the prices they get for their fish.

By neglecting improvements, sea port communities jeopardize their chances of getting a fair share of future business, which may develop within the fishing industry or affiliated industries throughout the country. Dollars and jobs are being lost to such communities because of a lack of facilities to handle vessels which otherwise would operate out of those ports.

NATIONAL FISHERMAN

The Fishing Industry Magazine

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June 1959

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New Bedford's Most Powerful Scallop

LAURA A.

Gets Excellent Performance From

WAUKESHA

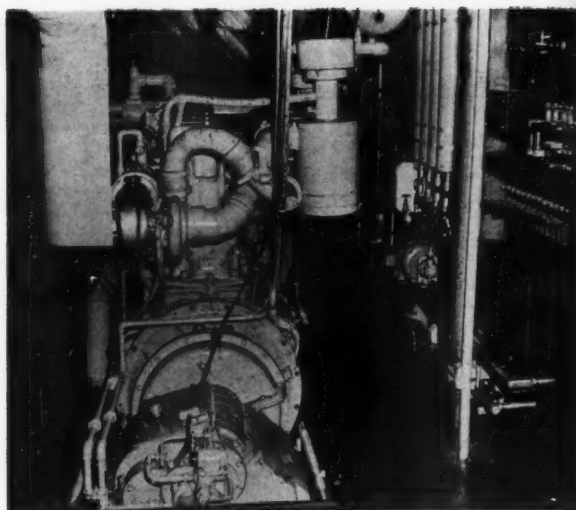
Turbo-Charged DIESEL

BOTH Captain-owner Chris Aiello and engineer Maurice Gracia have high praise for the new Waukesha Diesel in their 98-foot scalloper "Laura A."

Their first trip of scalloping after repowering convinced them they have an economical engine that's easy to operate, with plenty of responsive power.

The Model LRDBCSM Waukesha Diesel in the "Laura A." makes her the most powerful boat in the New Bedford fleet. Turbo-charged and rated 555 hp. at 1200 rpm., the engine swings a 64 x 44, four blade Federal propeller. It is equipped with Snow-Nabstedt 3.5:1 hydraulic reduction gear and American Bosch Hydrotor starter.

The "Laura A." joins numerous other North Atlantic vessels that have been powered with Waukesha Diesels by Hathaway Machinery Co., Inc. Everyone of these installations is giving outstanding performance for satisfied owners.



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FISHERY PROGRESS

► Vessel Mortgage Insurance

Regulations, covering the insurance of fishing vessel mortgage insurance by the Department of the Interior, have just been released. The regulations provide for the insurance of mortgages or loans given to finance the construction, reconstruction, or reconditioning of fishing vessels. They are somewhat similar to those for mortgage insurance on houses is handled by the Federal Housing Administration.

The mortgage can not exceed 75 percent of the actual cost of construction, reconstruction, or reconditioning. The maximum interest rate is five percent, except when a finding is made by the Secretary of the Interior that a higher rate is necessary. If the raise is justified, it may be a maximum of 6 percent.

The annual premium is one percent of the average, unpaid balance of the loan. An exception is made when the mortgage is less than 50 percent of the actual cost. In that case the premium is three-fourths of one percent.

Although the regulations became effective on May 28, the program could not be implemented immediately due to certain technicalities in connection with funding the program.

► Fish Sticks Up

Preliminary data indicates that the United States production of fish sticks during the first three months of 1959 amounted to 18.3 million pounds. The production of fish portions totaled 8.9 million pounds, according to a Bureau of Commercial Fisheries report.

This was an increase of 1.4 million pounds or eight percent in fish sticks and 4.2 million pounds or 89 percent in portions, compared with the same period in 1958.

► New Potential Fish Market

The potential market for fish and shellfish in the eating facilities of the Nation's manufacturing plants is not being fully exploited. The situation was revealed in a survey conducted by the Department of Interior.

The study shows that 85 percent of the plants with food facilities, and having 250 employees or more, serve fish and only 52 percent serve shellfish.

The survey was financed by Salt-onstall-Kennedy funds, and made by Dun and Bradstreet, in conjunction with a larger food survey. The purpose of the survey was to discover and point up areas toward which selling fishery products could be directed.

► McKernan Chairs Sardine Meet

Donald L. McKernan, director of the Bureau of Commercial Fisheries, has been named chairman of the World Scientific Meeting on the Biology of Sardines and Related Species in Rome, Italy, September 14-21.

The meeting is being held under the sponsorship of the Food and Agriculture Organization, U. N. The purpose of the meeting is to consider methods of determining reasons for the violent fluctuations of population of the sardine.

It is hoped to eventually create a system of predicting supply, so that the industry will be able to adjust itself to large or small harvests. The U. S. catch of sardines was over 200 million pounds in 1958.

The meeting hopes to document the extent to which sardine resources are being harvested. It will also cover the extent to which exploitation is hampered by fluctuations, through lack of knowledge of resources and biological information.

Other things to be considered will be the value and means of documenting information already at hand, methods for exchanging information and teaching services, and the type of meetings to be held in the future to further the program.

► Fishing Gear Study

Several recently developed devices, designed to provide information concerning trawling gear performance and environmental conditions to fishermen and scientists, were tested, recently, aboard the Bureau of Commercial Fisheries research vessel, *John N. Cobb*.

The instrumentation studies included tests of a new electric trawl cable, designed to monitor and telemeter information from fishing gear on the ocean floor to the bridge of the vessel.

The cable has the dual purpose of operating as a standard trawl warp and for carrying electrical impulses. Information currently telemetered through the cable includes a measure of the depth at which the net is operating, the temperature of the water at the net, and information on the performance of the fishing gear.

The latter information is monitored by a newly designed bottom-indicator. It indicates via a light on the bridge when the trawl doors reach the bottom and whether or not the net is fishing. When the doors are functioning properly a light flashes. If the trawling is too fast or currents are encountered which alter performance of the gear, the circuit is broken and the light goes off.



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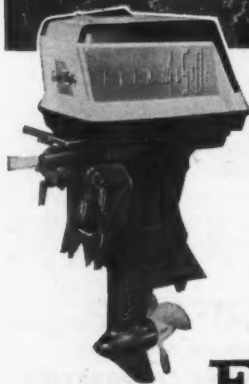
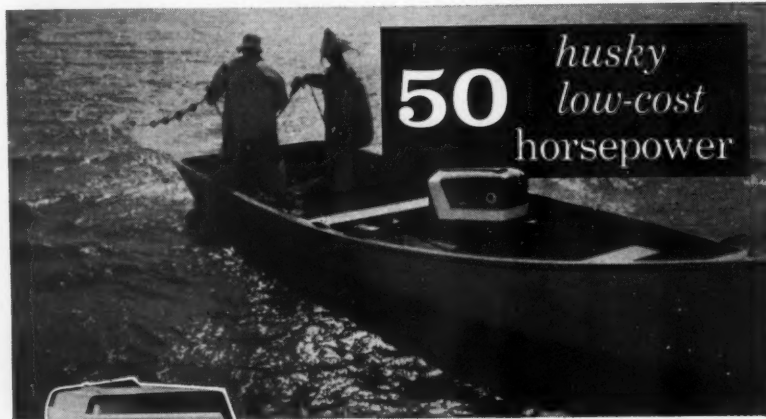
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► Tuna Tops in Volume

In 1958, 36 canneries in seven states, American Samoa, Hawaii, and Puerto Rico, produced 277 million pounds of canned tuna and an additional two million pounds of tuna-like bonito and yellow tail.

Tuna is the number one food fish in volume and number three in value. It is exceeded only by shrimp and salmon.

This fishery came into existence because of the sardine failure of 1903. When that harvest failed, the previously unwanted tuna was canned and offered to the public. The fish was well received and has become the principal canned fish in the U. S.

► Cuba Shrimp Agreement

The shrimp conservation convention between the United States and Cuba, signed at Havana, Cuba on August 1958, was transmitted to the senate in March 1959, by the president for ratification, together with a report by the Secretary of State. It was favorably reported to the Senate in May, by the Committee on Foreign Relations, without reservation.

► U. S., Canada Fish Meeting

Several International questions regarding West Coast fisheries, in which the U. S. and Canada are interested, were scheduled for discussion at a high-level conference in Vancouver, B. C., recently.

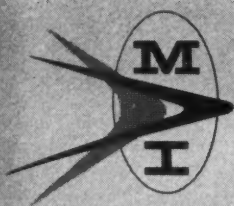
William C. Herrington, special assistant to the under secretary of state for fisheries and wildlife, was to be chairman of the U.S. group. George R. Clark, deputy minister of fisheries was named chairman for the Canadians.

Fishing lines in the Strait of Juan de Fuca and in Alaska, the silver salmon fishery, and co-ordination of measures for regulating the troll fishery were among the subjects to be considered.

► Great Lakes Compact

The Senate Committee on the Judiciary reported favorably to the Senate, granting consent of Congress to a Great Lake Basin Compact. The pact would provide for cooperative action among the states of the Great Lakes area with provisions existing for extension to include Canada.

Among other things, the action would create an agency of the states to be known as The Great Lakes Commission. The Commission would be responsible for recommendations providing for uniformity or effective coordinating action in fishing laws and regulations. This would also include cooperative action to eradicate destructive and parasitical forces endangering the fisheries.



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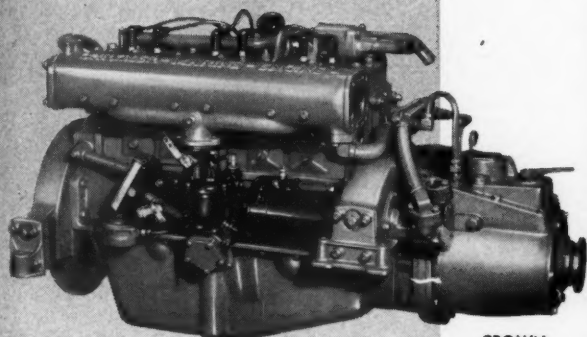
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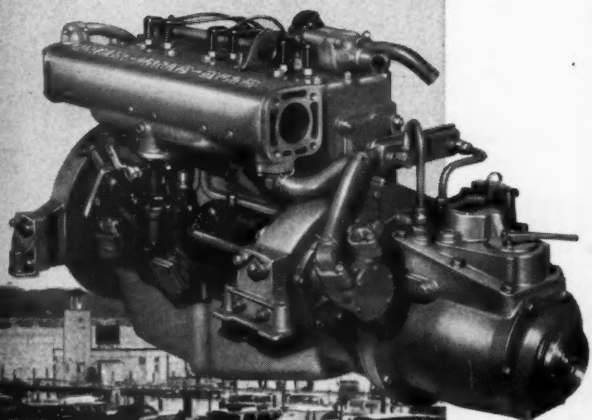
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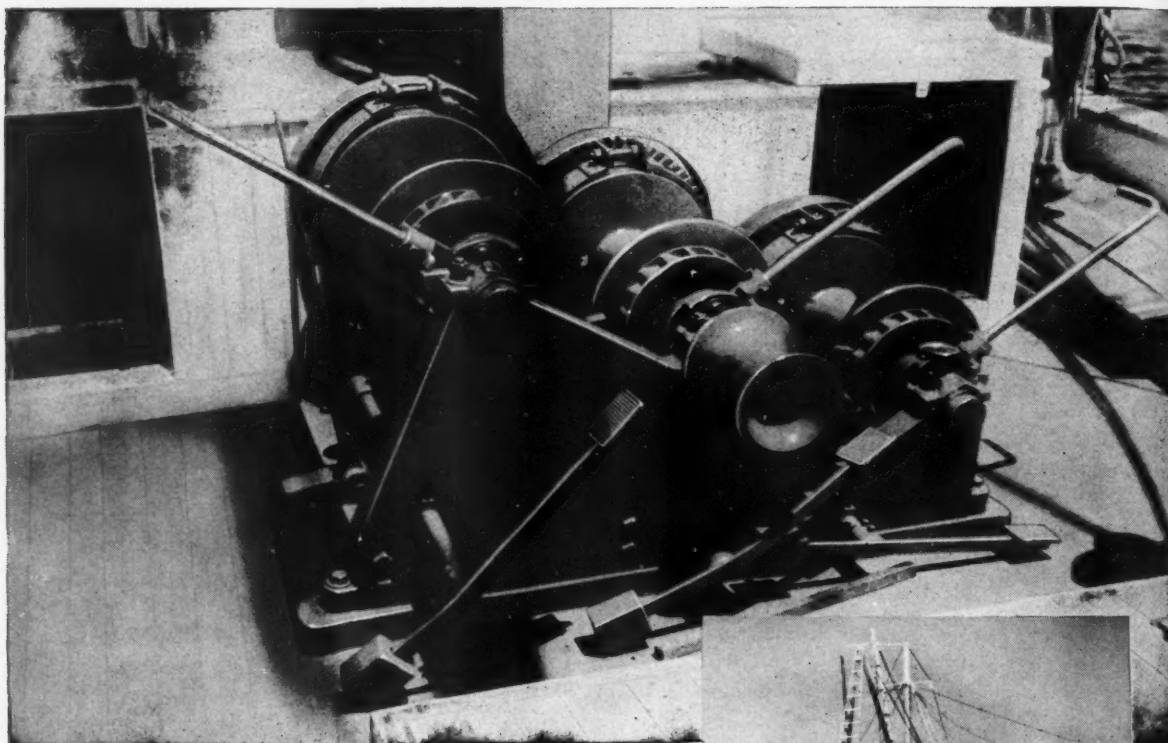


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STROUDSBURG HOISTS!

The Maestro Gamboa Boatyard of Carmen, Mexico recently completed a 70-foot shrimp trawler, the "Principe Enrique" for Felix Romero of Campeche. The builders designed the boat to include the latest in modern equipment. An unusual feature is that it is one of the first Mexican shrimpers to be fitted with a variable pitch propeller.

For this modern double-rigged trawler now plying the Gulf, it is only natural the hoist selected for service was a Stroudsburg 515½T triple drum unit. Stroudsburg Hoists are, by far, the first choice of the shrimp fleet. Today, more than 90% of all trawlers in Southern waters are Stroudsburg Hoist equipped!

Stroudsburg makes a complete line of hoists for both single and double-rigged service. These hoists are quality built to stand the toughest of daily use and abuse. They are low in initial cost and easy to maintain. When you buy a new vessel or refit your present one, make sure with a Stroudsburg Hoist!

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Need For Greater Boat Safety and Efficiency

THE Second World Fishing Boat Congress, held in Rome, Italy, April 5-10, met to tackle one of the main problems facing the world fishing industries. This is design and construction of fish boats that operate at top efficiency, yet are safe and seakindly. The scope of the Congress covered performance, concentrating on practical design, cost particulars, operation experience, etc. Included, were the latest types of commercial vessels as well as current thought and experiment for their improvement.

The importance of designing and building more effective boats is emphasized by the lack of knowledge regarding fishery resources, according to B. R. Sen, director-general, U.N. Food and Agriculture Organization. We know little about the location, movement, and spawning of fish in uncharted oceanic regions, he said.

Much remains to be done, before fishing boat design reaches the technical level of other ships, Sen continued. Application of science and modern techniques to agriculture has yielded benefits both to producer and consumer. The same process could make fishing boats produce more efficiently and give fishermen a higher living standard.

The boat constitutes the heaviest part of fisheries investment in highly developed countries. A recent investigation has shown the figure to be 67 percent of the total, commented Sen. It was 45 percent in 1917 and 59 percent in 1935. As mechanization progresses, the investment tends to absorb a higher proportion of the total. This illustrates the dominant position held by the boat in fishing industry economics.

At Rome, fishing boats were discussed in relation to fisheries as a whole. Their architects were considered, not only as draftsmen, but as developers of boats which give maximum yield under various circumstances. The Congress was divided, for purposes of uniform presentation, into segments covering construction, sea behavior, productivity, and tactics.

Construction Analyzed

The subject of construction covered scantlings, new materials, fish holds, installation of machinery, and construction costs. As boats from different regions vary in construction, their strengths, while subject to similar conditions, are unlike.

By analyzing the history of individual boats, a standard set of minimum scantlings should be possible, according to reports. This could prevent faulty construction, lead to simplification of construction regulations, and reduce building costs. U. S. architects, Dwight Simpson of Boston, Mass. and H. C. Hanson of Seattle, Wash., delivered the main papers on the subject.

Simpson, reporting on investigations of fishing vessels 50 to 150 feet long, said a wooden boat is no better than its fastenings, and an over fastened boat is equally bad. Correct preboring is important. Round fastenings give better holding power than square ones, 33 percent greater in weight.

On a weight basis, small fastenings have greater holding power than large ones and are less apt to split wood. Hot dip galvanizing, he continued, gives ferrous fastenings improved life. Timber connectors could increase the holding power of a fastening in sheer, five times.

During the past 25 years, many new materials have been developed and used for certain details. Lately, plastic has been used increasingly in the construction of smaller boats. Patrick D. DeLaszlo, of Halmatic Ltd., Portsmouth, England, said the advantage of plastic is the low initial cost. One hull costs no more than an equivalent wooden hull, and several hulls, from the same mold, are cheaper.



"Sardinops", 120' research vessel was designed by Jan-Olof Traung, chief, Fishing Boat Division, FAO, and Ambrose Hunter, managing director of Cook, Welton and Gremmell Ltd. in England. She was built under FAO guidance by Globe Engineering Works Ltd., Cape Town, So. Africa. Noted for its slow easy roll, the boat is powered by a Burmeister and Wain 600 bhp. Alpha Type 490.

Continuing, DeLaszlo said maintenance costs are low since plastic is unaffected by seawater. The hulls are dry because they are homogenous and will not open at the seams. They do not rust or corrode, and are not subject to galvanic action. They do not become contaminated by fish, nor add to their weight by water absorption. Plastic is resilient and does not dent. Hull damage, if received, will be local, while repairs may be made in one tenth the time required for wood.

In the opinion of W. A. MacCallum, research engineer, Research Board of Canada, naval architects can serve the industry better by understanding fish preservation. Improvements could be realized if fish hold location, shape, construction, and fitting out were given the same consideration as hull form, safety, and engines.

Need Better Sea Behavior Studies

As fishing is limited by the weather, sea going qualities of fishing vessels must be improved to increase fishing time and minimize hardships on the crews. Knowledge of seaway behavior has increased since the first Congress. While the work has progressed mainly on large ships, some work has been done on fishing craft.

Of particular interest are experiments in seakindliness covering the prismatic coefficient, as reported by Jan-Olof Traung, chief, Fishing Boat Section, FAO. A considerable number of tests in calm water with fish boat models have been made. A comparison of results shows resistance is governed by the same factors as larger ships.

However, few tests have been made in waves. Still fewer comparative measurements have been taken at sea, and nothing has been published about smaller boats, Traung said. Sharpness is an important influence in calm water resistance. Tests show the advantage of a small angle of entrance, the center of buoyancy far aft, and a transom stern instead of a round stern.

Model tests in waves indicate low prismatic coefficients require less power in the seaway and have more agreeable motions. The trend in large fishing vessel construction is to adopt the lower coefficient.

More knowledge of resistance when towing or handling gear is needed. In discussing the problem, H. I.

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Will Deepening James River Upset Oysters?

Virginia watermen, scientists unsure of dredging's effect
on the river's outstanding seed oyster producing qualities



"Nannie", owned by J. W. Ferguson Seafood Co., Remlik, Va., is shown unloading at the company dock. She is powered with a 115 hp. Chrysler marine gasoline engine.

WHAT stake does the Virginia oyster industry have in the James River that it wishes to stop the plans for deepening the river channel? Richmond, and other business interests, want to cut another 10 feet of depth into the 300-foot wide channel. The river runs through the rich seed oyster beds, stretching 12 miles up stream from the James River bridge at Newport News. The job would boost shipping and lure new industry to the river valley they say.

The oyster industry's stake is a high one—the James is heralded the best oyster seed bed in the world. Oystermen are uncertain what a change might do to the fine balance of salinity, current flow, temperature, etc., that make it so.

Uncertainty Compounded of Known and Unknown

Their caution is compounded of what scientists do and do not know of the fishery. The unknown, however, is not necessarily unreal. The respect of it, paradoxically, has scientific backing. About 2,000,000 bushels of seed oysters were harvested from the James River public rocks in the year which ended last June 30, Virginia Commission of Fisheries records show. The price averaged about \$1 a bushel for the harvest, which was more than 70 percent of the Virginia seed crop.

The other major seed-producing area is the ocean side of the Eastern Shore. It has a set of baby oysters much heavier than the James River, but far fewer of them live. This situation is apparently caused by the higher salinity which invites disease organisms, says Dr. J. D. Andrews, oyster biologist for the Virginia Fisheries Laboratory at Gloucester Point. This year, the Shore crop dropped because of the severe cold, he believes.

"The James", said Andrews, "has never failed." Its harvested one and two year old seed wind up in all the market oyster producing areas of the state, except the Shore. These other areas will grow big oysters, but not a crop of seed. The landed value of all Virginia oysters,

market and seed, is about 10 million dollars a year. Retail value, runs to 20 to 30 million a year.

The fisheries Commission lists 117 oyster shucking houses in Virginia. They employ from a few to 100 or more workers. Last year, the Commission issued 4,191 hand tongs' licenses, of which, 1,035 were in the James River districts. The tongs come from all Tidewater and make the James area their week-day home during the seed harvesting months.

The Commission office has about 8,437 separate leases of river bottom rocks for private growing. It estimates there are 7,000 private planters with holdings from several to thousands of acres. There are 280 leases up the sides of the James, flanking the public rocks in the middle.

Virginia is the largest producer of market oysters in the United States, primarily due to seed production. Latest world tabulations available at the Lab indicate the state is also the largest producer in the world.

Why the James is Productive

Andrews has listed several main items which contribute to the productivity of the James River seed beds. The salinity range is low enough to keep predators and disease out. Circulation is such that the larvae stay in the river. It is a sheltered area. The breeding season is long—90 days from July through September; if some broods fail, later ones can still set. The large drainage area may mean more food.

The James channel goes through ten miles of public seed grounds, eight miles of which would be deepened if the project is approved. The work would also shave off a little of the shoulders of the present channel. U. S. Fish and Wildlife Service biologists figure it would remove a total of 65 of the 18,400 acres of seed grounds in the area. They said 30 of the 65 acres are irreplaceable oyster rock. But the Virginia Laboratory biologists say it is trivial against the main concern, salinity.

Increasing saltiness does not effect the oyster set, but it brings in the oyster drill and dermocystidium, a major fungus disease discovered by the lab. Fresh water flowing downstream forms the top layer of the river, while salt water moves up from the bay on the bottom. Biologists are now convinced that deepening the channel will let in more seawater, increase salinity somewhat, and extend the damage by drills. How much or how little is part of the unknown.

A related item is the pattern of erosion and fill. Deepening could change the flow that effects the naturally delivered silt and the movements of the baby oysters. It could change the depth of the level of no net motion between fresh and salt water layers. It is theorized that the present water movement pattern now favors setting and retention of floating, young oysters.

The engineers held a hearing on the channel plan at Richmond in December 1955. Dr. J. L. McHugh, then director of the fisheries lab, urged every precaution against damaging oysters during the dredging, and silt disposal. No oyster spokesman then opposed the deepening project, J. Malcom Bridges of the Richmond Chamber of Commerce said.

The salinity question was broached in a 1958 General Assembly committee hearing. The director of the Chesapeake Bay Institute of Johns Hopkins University proposed a study with a hydraulic model of the area to determine physical changes. The Virginia Fisheries Commission sub-

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Double Rig Shrimping In The Gulf Of Mexico

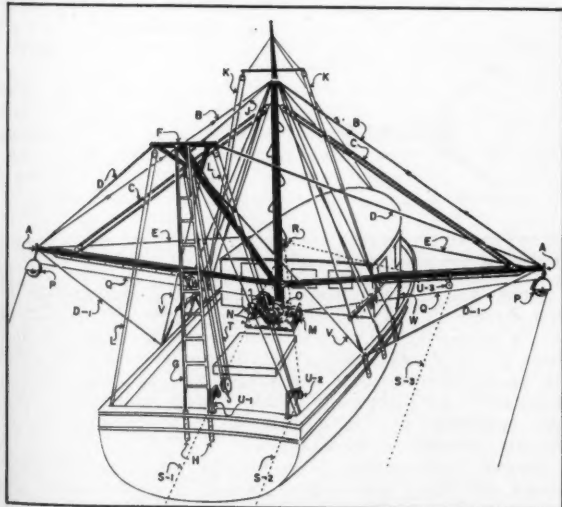
A recent, major development in the shrimp fisheries of the Gulf of Mexico and the South Atlantic Coast is the widespread conversion of conventional trawlers from single-trawl to two-trawl rigs. In this development, a vessel tows two small nets simultaneously rather than a single large one. This new method is generally referred to as "double-rig trawling".

The first attempts to develop the double-rig method in the Gulf reportedly were made by shrimp fishermen at Rockport, Texas, late in 1955. Following these initial efforts, others in the industry became interested and have subsequently contributed to the successful development of the method. The evolution of the double-rig method, while necessarily one of trial and error, has been marked by free exchange of ideas.

The benefits inherent in this trawling method were rapidly recognized and accepted. By 1957, a major trend toward conversion was under way at Aransas Pass and other Texas ports. The popularity and acceptance of conversion soon spread to Florida and to Mexico. Although this method of shrimping has reached a successful stage in its development, it is still evolving, and improvements are frequently being made.

Several Important Changes Needed

The major changes required to effect a conversion from a single to a double-trawl rig are: Replacement of the towing boom and the try-net boom with two outrigger booms having special blocks. Modification of the main boom. Modification of the winch. Replacement or modification of existing trawling warps. Replacement of the single large net and doors with two smaller nets and doors. Relocation of the try-net hauling point.



Arrangement required for double rig trawling. A. towing boom; B. towing boom topping stay. C. topping lift tackle; D or D1. towing boom back stay, either, not both may be used; E. towing boom bow stay; F. modified boom structure; G. boom back stay; H. boom back-stay plate; J. boom topping lift stay; K. single block tackle; M. modified trawl winch; N. Gypsy heads; O. center drum for try net-wire; Q. towing wire; R. try net leading block; S-1-2-3. try net lead, one used; T. tail block; U-1-2-3. try net lead block, one used with S-1-2-3. V. boom shrouds; W. chin stoppers for outriggers.



"Anita Marie", 62' double-rigger owned by the Patterson Shrimp Co., Inc. of Brownsville, Tex., is powered with a 6-71 General Motors Diesel equipped with 4.5:1 reduction gear turning a 46 x 36, 4-bladed Federal propeller. She was built by Diesel Engine Sales, Inc.

Two outrigger booms replace the original single towing boom and the try-net boom. The outriggers, usually 24-feet long, are mounted on the mast pad eyes or are fitted to a gooseneck. Materials, construction details, and rigging arrangements vary throughout the shrimp fleet.

In Texas, outrigger booms have been fashioned from discarded drill-stem pipe, which is available at a cost of approximately \$1 a lineal foot. The pipes, which are used in the oil fields, measure 24-feet in length, 4-inches in diameter, and from about five-eighths of an inch to three-fourths of an inch in wall thickness when new. With continued use in the oil fields their wall thickness decreases. When worn to about one-half of an inch in wall thickness they are discarded for drilling purposes. Shrimpers purchase them for use as outrigger booms and strengthen them with braces or stiffeners.

Materials commonly used for the braces are 1-inch outside diameter heavy duty pipe or three-fourths of an inch iron rod. In ports where discarded drill-stem pipe is not available, outriggers have been made of heavier pipe which does not require the use of stiffeners.

Topping lifts for the outriggers are provided by double-block tackles with the hauling parts secured at the pin-rails. Usually, the outriggers are set for fishing at an angle of 20° above horizontal. Their towing blocks lie about 10-feet to 12-feet above the water in a smooth sea. A slightly higher angle of set is preferred by some captains; a lower set is seldom used. In addition to the topping lift, a preventer stay is provided which passes from the mast to the head of each outrigger. The preventer is usually made of iron rods in three sections interlocked by welded eyes. Chain or wire rope is often used.

The bow stay for each outrigger leads forward and is secured at the rail by a turnbuckle to a welded eye. The after stays of the outriggers may vary. One type leads from the outrigger to the shroud plates, and the other leads to the "T" bar on the head of the main boom. Either type may be rigged, but not both. Some captains have also fitted the outriggers with a chain strap to prevent the boom from jumping upward.

Towing blocks, attached to the heads of the outriggers, must have a wide sheave to allow the splicing and bridle of the trawl warp to pass through freely. To serve this purpose, special blocks have been fabricated using auto-

mobile wheels for the sheaves and 1-inch iron plate for the housing. Standard blocks of wide-sheave construction have also been used.

Rigging the Main Boom

In a conversion, the main boom is set rigidly amidships. From that position the main fish tackle or tail block may be used to equal advantage from either side. The modified boom has a cross member of 4-inch pipe, about 6-feet long, welded to its head to form a "T". Single-block tackles, for hanging nets, are secured to pad eyes which are welded to each end of the "T". The boom shrouds lead from near the head of the boom to just aft of the shroud lines. A ladder which may be made of iron rods is at the stern. This is a shift from its usual position where it serves as a back stay. The vertical rods of the ladder are welded to the "T". They are made fast to the deck with turnbuckles to metal plates located centrally at the transom.

One variation, used in rigging the main boom, eliminates the "T" construction from the boom head. Single-block tackles are still provided, however, by welding pad eyes directly to the head of the boom. Other versions, usually used when cleats are provided on the boom for climbing, eliminate the ladder construction entirely. Some may merely have two vertical iron rods, without crossbars, welded to the head of the boom and secured to the transom as bracings. Other bracings and guys, which vary from vessel to vessel, are made of chain, wire rope, or iron rods.

To fish the double rig, it is necessary to have two gypsy-heads on the hoist with which to handle the two lazy lines. On vessels equipped with a three-drum hoist, a longer drum shaft is required to enable mounting an

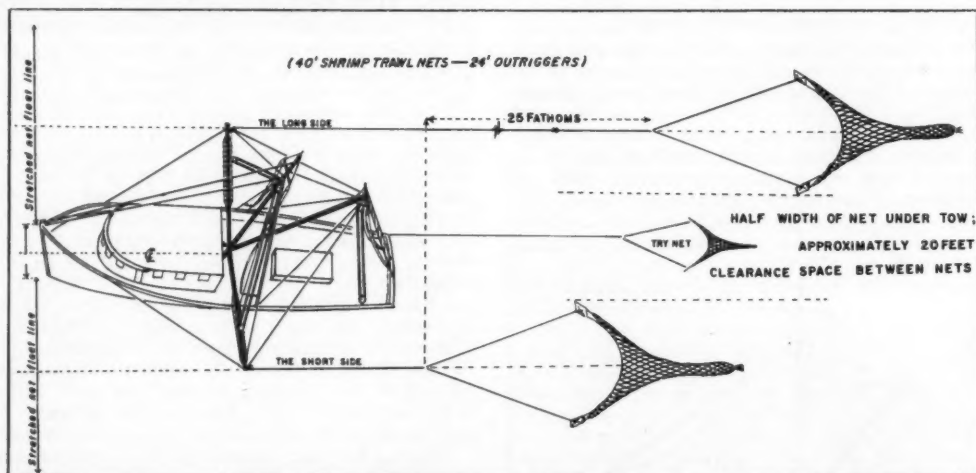
may be used, or one of the outriggers may be fitted with a block which can serve as a lead and towing point for the try-net warp. If the outrigger hookup is used for this purpose it must be on the outrigger which handles the longer trawling warp as described below. The function and use of the try net are the same as with the single-rig.

Operation of the Double Rig

The procedures for fishing a double rig necessarily differ from those used for a single rig. To prevent fouling of the two trawls, one trawl is set out first and fished about 25 fathoms farther astern than the other. Usually the starboard trawl is given the longer scope. After the first trawl is set out, about 25 fathoms of warp are paid out before the second trawl is set. When the second trawl is properly set out and clear, both trawls are lowered simultaneously to the desired depth of operation.

At the end of a drag, usually about 3 hours in duration, the trawling warps are brought aboard by hauling them simultaneously. The trawl with the shorter warp comes in first and its lazy line is retrieved by using a long-handled pole hook. This line is then carried to the gypsy-head of the hoist and heaved in to haul it clear of the propeller. By this time the other trawl is alongside and its lazy line is retrieved and heaved clear. A strap is then made fast around one of the bags and it is brought on deck by use of the tail block on the main boom. The other bag is landed in a similar manner.

Several advantages are attributed to double-rig trawling as compared to the single-trawl method. The most important claim is that it will catch more shrimp. While only estimates of increased catches can be made, many vessel operators consider that a 15 to 30 percent greater catch is possible.



Double-rigged shrimp trawler showing position of nets when being towed.

additional gypsy-head. In addition to this change, the try-net towing warp is placed on the center drum.

For double-rig trawling warps, wide use is made of 7/16-inch and 1/2-inch wire. The usual length of warp is 150 fathoms to each drum. A bridle is spliced to an eye at the end of each warp, a thimble being used in the splice. Bridle ends are attached to the trawl-door bridle chains with shackles and swivels in the usual manner. Lengths of bridles used in the fleet are not fixed, but vary from 18 to 25 fathoms.

Both the trawls and the doors used to replace pre-conversion equipment are of smaller sizes. Actual measurement depends on the size and power of the vessel, and the preference of the captain. To date, there is no standard combination of gear to vessel power. Most commonly, 40-foot to 42-foot flat trawls have been used, but some net makers have been supplying 45-foot trawls for double-rig vessels.

Three choices of leads which have been used by fishermen for handling the try net. A davit located at the stern

Some reasons advanced for the fishing superiority of the double-rig method are (a) that a 40-foot to 42-foot net is more efficient, size for size, than 80-foot to 100-foot nets, (b) that two smaller nets fish more efficiently over an uneven bottom than one larger net, and (c) that the total towing resistance of a two 40-foot nets is less than the resistance of one 80-foot net and therefore faster towing speeds can be attained.

Another advantage claim for the double rig is that losses of time, labor, and money spent on gear are lessened. In many instances where gear is damaged, only one small trawl need be repaired or replaced rather than a large one. With a reduction in gear repair time, fishing time can be gained.

Vessel crews favor the double rig because they too benefit financially from larger catches and because less effort is required to work this gear than with the larger single trawl. The double rig is safer in that hazards, such as the towing point on the after deck and the mass of overhead rigging, are eliminated.



Left to right, Major Nils R. Holmes, Napoleon T. Holmes and Capt. Joseph A. Nicodemisen, owners of the "Elizabeth N."

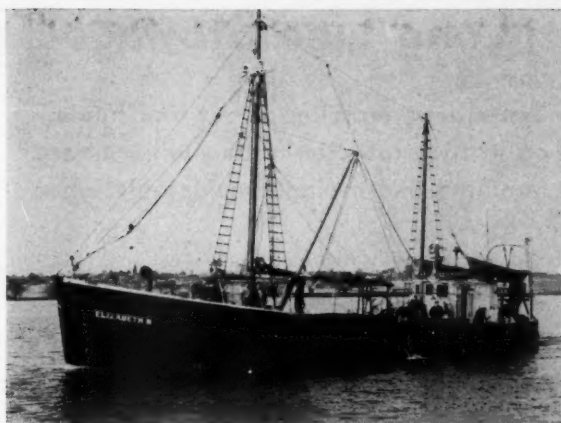
New Power for "Laura A." and the "Elizabeth N."

TWO of the largest and most successful scallop draggers at New Bedford, Mass. have been equipped with new engines to provide increased towing power, better steaming speed and ample reserve capacity. They are the 98-foot *Laura A.* and the 90-foot *Elizabeth N.*, both of which have new Waukesha Diesels, sold and installed by Hathaway Machinery Co., Fairhaven, Mass.

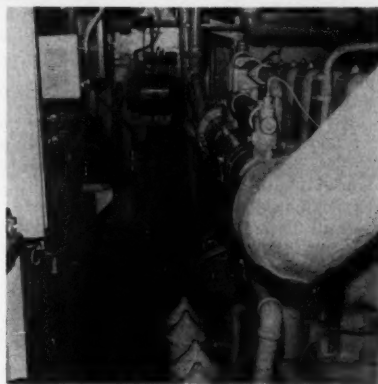
Capt. Chris Aiello, owner of the *Laura A.*, has had an extensive and varied fishing career, going back 25 years, during which he has operated six other boats. His present vessel was launched as the dragger *Potomska* by Peirce & Kilburn Shipyard, Fairhaven, in 1942, but was immediately taken over by the Government for war service. Aiello purchased the vessel when it became available at New York in 1951, and fitted her out for shrimping. He fished on Campeche Bank out of Tampa, Fla., for 7 months, and then returned to New Bedford, converting his vessel for scalloping.

Considerable renovating and alteration work was done on the *Laura A.* during her recent repowering. An all-new pilot house sheathed with exterior plywood and finished with cypress paneling and mahogany trim, was constructed. A new whaleback and steel flying bridge were added, a new steel engine trunk and new 4500-gal. capacity wing fuel tanks were installed.

The new engine, which gives the *Laura A.* a speed of



90' scallop dragger "Elizabeth N." of New Bedford, Mass. and her new 335 hp. Waukesha Diesel, sold by Hathaway Machinery Co., Inc.

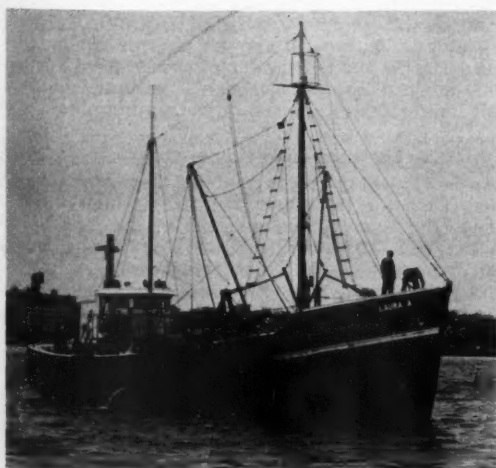


10½ knots, is a Model LRDBCSM, turbo-charged Waukesha Diesel, rated 555 hp. at 1200 rpm. Claimed to be the highest horsepower engine in the New Bedford fishing fleet, it swings a new 64 x 44, 4-blade Federal propeller on a 5" Tobin Bronze shaft, fitted with Hathaway flax packed stern bearing and stuffing box. The engine is equipped with #3971 Snow-Nabstedt 3.5:1 hydraulic reduction gear, American Bosch Hydrotor starting system and Ross heat exchanger.

The *Laura A.* has a separate 4-71 General Motors winch engine, located in the upper engine room. It drives a 653 Hathaway winch through a coupling and clutch, as well as a 6 kw. 110-volt Fairbanks-Morse generator. Exide Ironclad 110-volt batteries are used.

Four Marine Products pumps are belt driven off the counter shaft, and through valve controls they can be

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98' New Bedford, Mass. scalloper "Laura A." On the bridge, Captain-owner Chris Aiello, left, and Leonard P. Motta, sales engineer for Hathaway Machinery Co., Inc. who installed new 555 hp. Waukesha Diesel in vessel.



Long Line Stowage Tub Increases Efficiency

Continuous mainline is set and hauled on wooden tub eliminating unnecessary handling and saving considerable labor

THE latest modification of tuna long-lining, the tub method, has proven successful in experimental fishing.

With this method, the mainline, in one continuous length, is set from, and hauled into the wooden storage tub that gives this method its name. Droppers and floatlines are detachable and are removed from the mainline during hauling operations and reattached during the setting process.

By eliminating the handling of the mainline, a considerable saving in labor is effected. Fishing cruises were aboard the Bureau of Commercial Fisheries research vessels *John R. Manning* and *Commonwealth*, during which the new method and the conventional method of handling gear were compared. They showed that the usual set of from 60 to 100 baskets of gear could be made by 5 men, or less, using the tub method, whereas, the full crew of 11 was necessary to operate conventional gear.

Long-lining gears used mostly in the Japanese and Hawaiian high-seas fisheries for tunas and spearfishes. A series of baited hook droppers is suspended from a long mainline. Usually several miles in length, the mainline

The relatively low concentration of tuna in most regions of the open sea makes it necessary to set a large amount of gear over a wide area in order to insure a commercial return. Japanese vessels, fishing from 1,200 to 1,500 hooks a day, require more than 20 men for assembling, baiting, setting, hauling, and restowing the gear. An American purse seiner or live-bait vessel of comparable tonnage usually has a crew of about 12 men.

Several attempts have been to modify the long line in an effort to reduce the number of men necessary to operate the gear. No scheme offered enough promise to justify the continuation of its development.

Except for the "D" ring, the fishing gear in the modified method, is of the standard design. The "D" ring, a nonstandard fitting, is a new development. Its function is to provide free-swivelling action between dropper and mainline at any angle of pull. Formerly the AK snaps were clipped directly to the wire bridle. But, at acute angles under strong tension, the snap ceased to have any swivelling action and sometimes was pulled out of shape or broken. The new "D" ring maintains proper swivelling action with the dropper leading in any direction. Wire loops hold brass swivels at each end of the bridle, to relieve torque, which develops while the long line is being brought in by the hauler.

Construction of the Tub

The tub is mounted on the stern turntable in the space normally occupied by the purse seine on this type of vessel, with ample work space between the tub and the railing. A heavy, combination thrust and side bearing, bolted to the main deck, permits the tub to rotate in either direction. The bottom rim of the tub, reinforced with a circular steel plate, runs on a set of 8 cast-iron rollers. The deck gratings and railing on top of the turntable provide a safe working space above the wash of the seas, and make the tub easily accessible during fishing.

Inner and outer shells of the tub consist of panels of 1/4-inch marine plywood separated by 2 x 4-inch up-rights. The bottom, constructed of two panels of 3/4-inch plywood, has two-inch drain holes spaced at regular intervals. The tub is strengthened by circular steel bands around the outside walls.

A tub often measures 11 1/2 feet inside diameter and 4 feet in height. This size allows for storage of 100 baskets of mainline gear. The tub is usually rotated by hand.

Setting pins, 12" long, are spaced at equal intervals around the rim inside the tub. The pins are threaded into stainless steel bases. The bases are firmly mounted on the step so that the strains exerted on them during hauling operations will not cause damage.

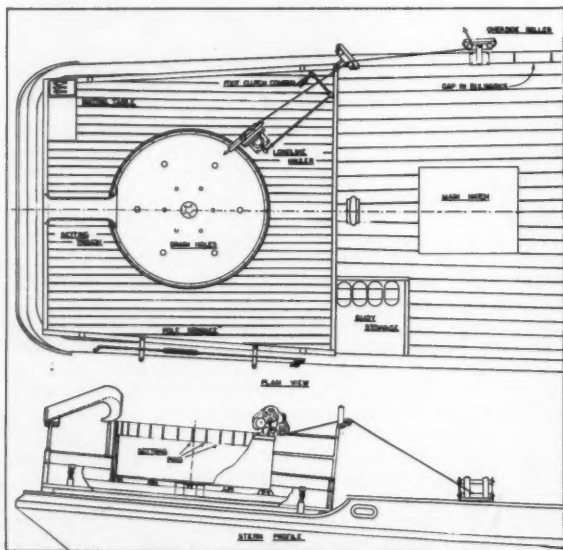
The setting trough is a demountable, sheet metal form used to confine and guide the outgoing mainline during the setting process. In general appearance it is similar to the type used in the halibut fishery of the eastern North Pacific. The inboard lip of the trough is mounted above the tub edge and slightly inboard of the setting pins.

The Long-Line Hauler

The gear is hauled by a conventional Japanese long-line hauler. This type of winch, turning at high speed with low inertia, is especially adapted to the long-line operation in which the mainline must be stopped frequently so that droppers can be removed.

The hauler is mounted on the turntable as close as possible to the edge of the tub. Because of the projecting gear shift lever of the winch, the hauler cannot be mounted with its inboard sheave over the tub. A deflector plate is used to bridge the gap between hauler and tub. The incoming line can be thrown at various angles by changing the height of the inboard end of the plate.

(continued on page 34)



Installation of long line stowage gear.

is buoyed up at regular intervals by buoys and floatlines. Unanchored, the gear drifts with wind and current with the hooks fishing at 100 to 500 feet below the surface.

The long line, however, is not utilized to any great extent by United States fishermen. Two major drawbacks to this method of fishing, have held back general acceptance by the American industry. First, the method is nonselective, so fish of various species and sizes are taken on the gear.

This presents no hindrance in a fresh-fish economy such as Japan possesses, in which there is a steady market demand for fresh fish of all types. However, it does present some problems to the United States canning industry, accustomed to dealing with fish of uniform size and species. The second problem is that a comparatively large number of men is required for long-lining.

SOUTH ATLANTIC

Lunz Named Director Of South Carolina Fisheries

Dr. G. Robert Lunz, director of Bears Bluff Laboratories, has been named acting director of the Division of Commercial Fisheries, South Carolina Wildlife Resources Commission. Lunz assumed his new duties on the first of June, while retaining his duties at Bears Bluff. He succeeds Alonzo B. Seabrook, fisheries director since 1952.

Lunz' duties with the Commercial Fisheries Division are administrative and he hopes the organization will be self-supporting soon. L. D. Schley, current auditor of the Resources Commission, will be named to a subdivision which will be set up to handle taxes and licenses, Lunz said. Lunz did not comment on other changes.

Continuing he said, "There have been many changes of the fisheries laws in the act recently signed by Governor Hollings. Most licenses and taxes have been changed. There is a new method of collecting taxes and licenses and new forms have to be worked out. Licenses issued prior to the signing of the act are valid until their expiration, but some new ones will have to be issued by July 1."

Earlier this year Lunz was appointed chairman of the Atlantic States Marine Fisheries Commission, an organization of scientists from Florida through Maine.

Satisfactory Chowan Settlement Seen

Net setting in North Carolina's Chowan River has been a source of difficulty between those who earn their living from those waters and sport fishermen. A proposed closing of the river to nets for six months of the year could lower the commercial fishery there, with the exception of a favored part-time operation.

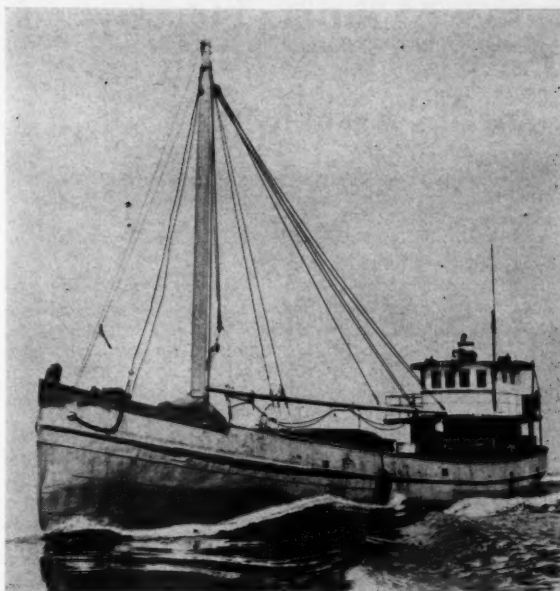
At the direction of Cecil Morris, chairman of the Conservation and Development Fisheries Committee, a meeting was arranged of the principals in the dispute to be held prior to a scheduled public hearing. All indications were that the compromise promised to be satisfactory to all concerned. The commercial fishermen have asked voluntarily for further restriction of the mesh size from 3 to 3 3/4 stretch, according to the season. To make enforcement easier, clarification of four regulations was also requested.

Shell Planting Begun in N. C. Waters

An oyster planting project has been started in several areas of North Carolina. Shells will be taken from the poorer areas and transported to locations more suitable for the rapid development. There is hope this move will greatly improve the oyster industry. It will also be a help in creating income for fishermen at the end of a season in inland waters.

Shrimp Bill Compromise Approved

The Commercial Fisheries Committee of the North Carolina State Board of Conservation and Development has approved a compromise on the Yow-Frink bill, designed to aid persons interested in taking oysters for personal use. The Yow-Frink Bill would allow persons who work on other days of the week to take shrimp and oysters for their use on Saturdays and Sundays. The bill, as suggested by the House Sub-committee, would apply only to Pender, Brunswick, and New Hanover Counties.



"MAJOR HENRY BREWERTON", 100-foot vessel operated by the Standard Products Company of Whitestone, Va., is powered with a 6-110 General Motors Diesel turning a three-blade 48 x 34 wheel through 3.75:1 reduction gear. The boat has been in service on the Chesapeake Bay over 100 years.

Hargis Named Virginia Lab Director

Dr. William J. Hargis has been named full director of Virginia Fisheries Laboratory at a recent meeting of the executive board. Hargis has been acting director of the Marine Research Institute since January.

In accepting the position he said, the "Laboratory has rendered valuable assistance to the commercial fishing industry of the state, and rapid expansion of its services under Dr. J. L. McHugh, who built on a sound foundation provided by his predecessors. The science of marine research is in its infancy and the pressing demands of the times requires that Virginia Fisheries Laboratory expand its services to the people of the state."

Corrosion Study at Virginia Institute

A new research project investigating the use of zinc anodes to protect crab pots against corrosion is being conducted at the Virginia Institute for Scientific Research, Richmond. The effort was recently announced by Dr. Schrade F. Radtke, director of American Zinc Institute's expanded research program. Tests are being made under the joint sponsorship of the American Zinc Institute and the Virginia Fisheries Laboratory.

Corrosion of galvanized iron, wire crab pots costs a half-million dollars loss annually, in the Chesapeake area alone, Radtke said. The new program will consist of laboratory experiments, field work, and dissemination of new information. The field experiments are to be carried out with volunteer commercial crabbers, under the supervision of project personnel, during the crabbing season. Protected and unprotected pots will be compared in representative salinities of water from ocean water to brackish water.

Virginia Scientists At Solomons Meeting

A dozen scientists from the Virginia Fisheries Laboratory at Gloucester Point recently attended the 21st meeting of the Atlantic Estuarine Research Society at Solomons Island, Maryland. The Society consists of scientists who are working on the problems of rivers, bays, and inlets along the Atlantic and Gulf Coasts.

Future of Shrimp Industry Discussed By Southeastern Fisheries Association

Shrimp industry leaders met at the seventh annual convention of the Southeastern Fisheries Association in Miami Beach, Florida, May 16-19, to discuss the future of the business and to elect officers. L. C. Ringhaver, president of Diesel Engine Sales, Inc., St. Augustine, Florida was elected president of the association. Elected as vice-presidents were Sloan Peterson of Fernandina Beach, Florida, and Heber Bell of Passe-a-grille, Florida. R. T. Anderson of St. Simons Island, Georgia, is the new secretary and John Rosenberg of Tampa, Florida was chosen treasurer. Past president B. W. Bailey was elected chairman of the Board of Directors.

Various problems of the industry were hashed over, including conservation. Some difficulties, it was shown, have arisen from the growth of the industry itself. The business has expanded to the point where it is no longer localized. Boats from an area now fish far from home, and the discovery of the Tortugas and Campeche areas has enlarged the problem.

In the Tortugas area alone, catches of 17 to 22 million pounds were divided between 150 to 200 boats during the early days. In 1958, at the height of the season, 1,000 boats were dividing a catch of 24 million pounds.

Industry leaders attending the convention considered conservation measures as the best way to increase production. Only by protecting the beds, where shrimp are born and grow, can continued production be assured, they said. In this way, fishermen can find the product in their home area and not travel far afield.

As a step in this direction, Texas recently passed the Texas Conservation Act, providing a closed season in outside waters from June 1 to July 15. The Game and Fish Commission has the right to move the period forward or

backward 15 days. The measure is designed to protect small shrimp in nursery grounds in the spring, and small brown shrimp when they emerge from the bays.

Conservation measures are being worked out with closed seasons by the Shrimp Producers of Mexico. Conservation of small white shrimp brought about the measure after poor fishing was experienced last year. Heavy penalties are exerted on those ignoring the restrictions.

Ross Leffler, assistant secretary of the Interior, told the Southeastern Fisheries Association the way is being prepared for a broad research program to make the most out of Gulf shrimp and other seafood resources.

"Many toxic insecticides and pesticides are in common use today," he said. "Considerable concern has been expressed over the accumulative effects of these materials. A well rounded program is needed to determine the extent of present hazards and to devise control methods. Bills have been introduced in Congress to authorize large scale studies of this problem.

"The search for oil," he continued, "is taking place in off-shore waters, and in other instances in waters clearly within the jurisdiction of Florida. We must remain alert to these developments which are in the proximity of the rich Tortugas shrimp fishery.

"Research by the Bureau of Commercial Fisheries, Florida, and the University of Miami, already is yielding facts valuable for proper fisheries management. Juvenile shrimp are being marked and liberated in the shallow waters of the lower Everglades. There is positive proof that these estuaries are nursery grounds for the Tortugas.

"Similar studies are needed for the Campeche fishery, the Western Gulf Fisheries, and in other sections of the Gulf. Experiments are underway to devise gear with which shrimping vessels might profitably catch other species during the off season."

Florida's Governor Collins urged all groups concerned with marine resources to join in a cooperative program of conservation. He said a closely coordinated development program would result in a greater prosperity for the marine industries.

Hampton Roads Area Landings

Hampton Roads, Va., dragger landings for the month of May totaled 2,181,600 for 74 trips, compared with 1,271,900 pounds brought in by 37 boats in May 1958. The heaviest receipts for a single day were on the 10th with 12 vessels bringing in 293,600 pounds of fish. Porgy production from draggers was exceptionally heavy for the 60 day period preceding May 19, according to A. S. Hawkins of Hawkins & Forrest Inc., Hampton, Va. Landings for that period amounted to 5,303,400 pounds compared with 2,314,900 pounds during the same period of 1958.

Ship Virginia Oysters to California

The flavor and appearance of Virginia oysters have so attracted buyers in California, that an operator on Catalina Island is making a pilot planting of 500 bushels of seed oysters. Secured from the Hazelwood Oyster Company, they are being sent by refrigerated truck to the West Coast.

Since California does not allow the importation of any shell stock without inspection by a biologist, Dr. J. A. Aplin of the Department of Fish and Game, flew to Virginia to inspect the shipment before it left the Nansemond River area. Aplin consulted with Dr. J. D. Andrews of the Virginia Fisheries Laboratory at Gloucester Point.

Previous shipments of oysters from Virginia to San Francisco Bay were made years ago, but the oysters did not survive well in the cold waters. If the present shipment proves to be economically sound, perhaps seed oyster from Virginia will be regularly imported into California.

At the present time, the West Coast industry consists of seed oysters imported from Japan annually. The Japanese oysters do not have the flavor and shape of Virginia oysters, and are never sold on the half shell.

Virginia Dragger Renamed "Sol Fass"

The 115' trawler *Irene Y.*, owned by Isaac Fass, Inc., Portsmouth, Va., has been renamed the *Sol Fass*. She is fishing out of Gloucester, Mass. for the Summer under command of Capt. Tony Penello.

About ten other large Virginia draggers have gone North for the Summer, and are fishing from Gloucester and Portland, Me. Ten small draggers will continue to land catches at the Isaac Fass plant.

Fluke production from draggers at Portsmouth has continued unusually heavy. Croaker catches have been light, and the wholesale price of the variety reached a record high of \$30.00 per box.

Would Plant Oyster Shells

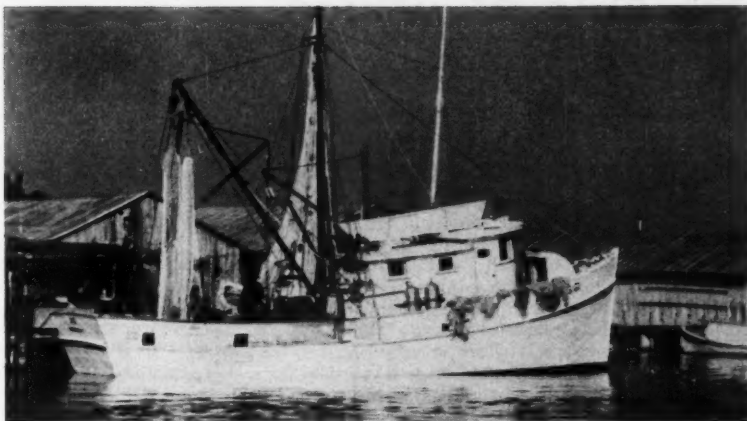
On Barren Maryland Ground

David H. Wallace has suggested Maryland lease barren ground to private oyster planters to aid the state maintain its place as a leading oyster producer. Wallace, executive director of the North American Oyster Institute and former Tidewater Fisheries Commission chairman, told industry leaders at Crisfield, the key to increased production lies in conservation management at the local level. Local committees should assume the responsibility for such a program.

Continuing, Wallace proposed greater emphasis on private shell and oyster seed planting, financed by private capital. Confined to barren rock it would not affect currently productive public oyster bars which are open to licensed watermen.

He noted that Japanese oyster industry, by using similar methods, has grown tremendously. Japanese oyster-

The Vandemere, N. C. shrimp boat, "GiGi" owned by E. H. Holton, is powered with a 120 hp. D 13000 Caterpillar engine turning a 41 x 36 Columbian propeller through 2:1 Twin Disc reduction gear. She uses Texaco fuel and lube oils and is finished with Woolsey paints. Equipment includes Surrette batteries, Columbian cordage, Northill anchor, Raytheon Fathometer, Kelvin-White compass, and an RCA radio telephone.



men make daily checks with seafood laboratory scientists to determine the best dates and conditions for shell and seed planting and other phases of production.

Maryland Studys Susquehanna Fishery

A three year study of the Susquehanna Fishery, administered by the Maryland Department of Research and Education, is designed to provide a sound biological basis for decisions permitting passage of migratory fish at Conowingo Dam. One of its most important aspects deals with the present condition in the reservoir environment in relation to the basic needs of eggs and fry of migratory fish that might spawn there.

Hydrographic research at Conowingo Lake will be devoted to determining the character of the water movements in relation to inflow, outflow, wind, and temperature layers below the surface. Location, nature, and changes in temperature will be considered. Character of bottom materials, amount of suspended sediment and how it restricts light penetration, as well seasonal distribution of dissolved oxygen, ph and alkalinity at various depths and locations will be surveyed, including the presence of any toxicants or pollutants.

The study is sponsored by the Philadelphia Electric Company and monitored by an advisory committee of nationally known fishery biologists. Studies of the physical character of Conowingo Lake are being made by oceanographers of the Chesapeake Bay Institute, Johns Hopkins University.

Estimate 2.5 Million Bushel

Maryland Oyster Production

Maryland oyster production for the season was expected to hit close to 2½ million bushels, according to Tidewater Fisheries Chairman John P. Tawes. Except for a five-week freeze-up early this year, the chairman believes oystermen have had as good a year as last when the oyster take went 2½ million bushels.

With the shell planting season at hand, Tawes explained that 60,000 bushels of Virginia shells were planted in Hooper Strait. Another 75,000 bushels of seed oysters from Eastern Bay have been transferred to other Bay and tributary waters.

Tawes says 20,000 bushels have been planted in common with Talbot and Dorchester. The rest has been put overboard in Kent, Queen Anne and Anne Arundel creeks and rivers. For the first time in several years the Tidewater Fisheries Commission has no plans for transferring oysters from polluted areas of the Choptank River.

Tawes noted that it will be three or four weeks before the TFC begins planting Maryland shells. Until that time the bulk of the shells put overboard will come from Virginia packing houses.

Plan Blockage of Potomac River Pact

The new Potomac River Compact between Maryland and Virginia may be caught in an attempt to block its immediate operation. Attorney for southern Maryland watermen, Robert T. Barbour, believes they will get sufficient signatures in a petition to place the agreement on the general election ballot in November.

Some of the watermen object to the pact, which gives equal fishing rights to Virginia, on the grounds it should be given a trial period and include the Virginia-owned lower Chesapeake Bay. Putting the compact before the voters would require 5,000 signatures submitted to the Maryland attorney general by June first and 5,000 more before the first day of July.

Tortugas Shrimp Bill Killed

The bill seeking to take a six-mile slice out of the Tortugas shrimp conservation bed off Key West, has been killed by the Florida House Salt Water Conservation Committee. By an 8-2 vote, the committee rejected the bill sponsored by Ralph Cunningham of Monroe County, which would open the northern most part of the bed to shrimping.

Higman, Gulf & Caribbean Secretary

James B. Higman has just been named as executive secretary for the Gulf and Caribbean Fisheries Institute, according to a late report. Higman fills the position vacated by Dr. C. P. Idyll who was elected chairman of the Institute during its eleventh annual session last November. Recently returned to the University of Miami, Florida, Higman is engaged in fisheries research at The Marine Laboratory.

The twelfth annual meeting of the Institute will be held in the British Colonial Hotel, Nassau, Bahamas, November 9-13, 1959. Concurrent meetings will also be held by the Shrimp Association to the Americas, the Southeastern Fisheries Association, and the National Shrimp Congress. The Institute exists for the purpose of providing an exchange of information on fisheries research, particularly between scientists and those in the fishing industry.

New Seafood Plant for Apalachicola

Plans for a new seafood processing plant in Apalachicola, Florida, were announced there recently. Construction is scheduled to begin soon on a \$250,000 plant by the A & J Development Corporation, headed by Joe C. Bentley of Tampa. The firm plans to process breaded shrimp, flash-frozen mullet, flounder, trout, and prepared scallops and oysters in season. Operations are expected to begin within three months.

GULF OF MEXICO

New Shrimp Conservation Bill Signed in Texas

Texas bays were closed recently to the harvesting of eating shrimp, the ban becoming effective as soon as the new conservation bill was signed by Governor Price Daniel. According to the new measure, no shrimp may be taken for human consumption, either privately or commercially, until August 11.

A closed season on offshore shrimping goes into effect July 1 and extends through August 15. The new open seasons are August 15 through December 15, for inside waters, and July 15 to May 31, for offshore waters.

Bait dealers can trawl for bait shrimp during the closed season, but must conform to bag limits as outlined by the law. Under the law, bait shrimpers may not take more than 250 pounds of heads-on shrimp per day. Processing them for human consumption is illegal. The new law also places limits on the size of commercial shrimp and the trawls by which they may be taken.

A meeting in Rockport was scheduled by the Game and Fish Commission personnel to work out details for enforcing the new law. Warden supervisor, Bob Cross of Houston, said wardens and key personnel would discuss and devise enforcement with Commission executive secretary, Howard Dodgen and chief marine biologist, Howard Lee.

Texans Oppose Atomic Waste Disposal

Commercial fishermen joined Texas governing leaders, Navigation District, and owners of shore lands in a united protest against Atomic Energy Commission permission for radio active waste disposal by an industrial waste disposal company.

A report to the Texas Game and Fish Commission by the opposing group, claimed such practice would do away with years of conservation efforts. They feel that waste materials, aided by currents and winds, could move toward Corpus Christi, Brownsville and the Mexican coast.

Texas Lab to Reveal Shrimp Movements

The U. S. Fisheries Biological Laboratory at Galveston, Texas, plans to stain shrimp on the nursery grounds to reveal their movements from the grounds to the offshore spawning areas. Research on the nursery is being continued and shows promise of defining complex ecology of the shrimp nursery grounds. It will also show when the white and brown shrimp larvae arrive from the sea and then depart to offshore waters.

Aransas Pass Association Elections

The Aransas Pass (Texas) Shrimp Association has elected C. O. Robert as president; J. B. Johnson is first vice-president; Eugene Webster, second vice-president; and L. E. Ray, secretary. Burwell A. King, E. C. Peterson, and Sydney E. Herndon are directors. The first official action was a vote to co-sponsor the Aransas Pass annual Shrimp-O-Ree.

At the meeting, Joe Buckmaster was named chairman of the Membership Committee and George Godfrey was chosen chairman of the Shrimp Education Committee. Howard Lee, director of the marine laboratory at Rockport, reviewed bills in the Texas Legislature pertaining to conservation and sponsored by the Texas Shrimp Association. He explained how they would affect shrimping and fishing if enacted.

Delay Ban on Commercial Netting in Galveston Bay

Enforcement of the recently voted ban on commercial netting in Galveston Bay was scheduled for a two week delay after the decision to close. Texas Game and Fish Commission officials, in April, voted unanimously to close the bays of Galveston and Trinity to commercial netters. The action had previously been taken, but the Commission order was thrown out by a district court injunction on a technicality.

Since that time, public hearings were held in Galveston, Harris, and Chambers counties. As a result of the hearings, the Commission again ordered the closing. Two weeks were needed to prepare the proclamation. As soon as the official notices were ready, they were scheduled for publication in newspapers with orders also posted in prominent places. Enforcement was slated to begin within two weeks of posting.

Train Change Opposed By Louisiana Firms

Ozio Fisheries, Morgan City, Louisiana firm, has filed a protest with the Interstate Commerce Commission against the Texas and New Orleans Railway's proposal to remove west bound train number 5 from service. The train is the fish and shrimp industry's primary shipping means in the Morgan City, Berwick area. Other fisheries in that area are preparing protests and statistics to show their dependence on a reliable westward shipping agency.

There is no other shipping agent between Morgan City and the Orange-Beaumont-Houston terminus, according to reports from Railway Express officials and the protesting fisheries. Nearly all fish shipments from that area go to western locations. Fish shipment beyond Houston, westward, is affected by means of trucking shipment boxes east to New Orleans where they are placed aboard trains for western shipment west. No trucks going west from Morgan City carry wet express.

Asks \$10,000 for Louisiana Crawfish

Representative Robert Angelle, speaker of the Louisiana House was confident, recently, that the Legislature would approve \$10,000 requested for crawfish research. Angelle said he would sponsor the bill, and that he received the governor's promise of full support. Crawfish, a main source of income during summer and spring months, have been scarce this year.

The research will have two purposes, Angelle said. The first will be to determine what is behind the fall-off in the crawfish industry. The second will be to determine whether a closed season is necessary. No controls have ever been placed on crawfish, there, he said.

Hold Biloxi Shrimp Fleet Blessing

The traditional 300 year old blessing of the fleet festival was celebrated in Biloxi, Miss., early this month. Several hundred ships participated in the event. Capt. Amos Ross, Biloxi, was crowned king. Other events included a coronation ball, shrimp supper, and awarding of prizes for the best decorated boat.

Pascagoula Unit May Open

T. L. Murphey, president of Bluff Creek Canning Co., Vancleave, Miss., announced that an option has been signed, and lease agreements are being prepared for a new Pascagoula industry. Bluff Creek Canning Co. is a subsidiary of Morrell Co., one of the nation's largest packing outfits. Murphey said a new product, manufactured from scrap fish would be processed and bagged at the new location. The product is reported to be an animal food.

Alabama Seafoods Chief Appointed For Conservation Department

Conservation director William C. Younger has announced the appointment of George W. Allen, professional conservationist, as chief of the Conservation Department's Division of Seafoods. Allen replaces acting chief, Ralph H. Allen, Jr., who has returned to his post in the Department's Game and Fish Division.

George Allen has been a consultant forester and wildlife management advisor and head of the State Game and Fish Division's federal aid game restoration program. As chief of the Seafoods Division he will supervise oystering, shrimping, crabbing, and commercial fishing along the Gulf Coastline. He will administer enforcement in regulating fishing and seafood industry operations.

"Terry Lynn" and "Donald Wayne" are identical shrimpers owned by S. M. Snodgrass of Brownsville, Tex. Built by Diesel Engine Sales, Inc., St. Augustine, Fla., they are powered by 152 hp. Caterpillar engines which turn 50 x 34, 4-blade Columbian propellers through 3:1 reduction gear. Each is equipped with Yacam batteries, 5" Ritchie Globe Master compass, Bendix depth recorder, and Metal Marine automatic pilot.



More Alabama Oysters Expected

An increase of Alabama oyster production in the near future has been forecast by top officials of the Department of Conservation. To obtain the increase, Director William C. Younger and newly appointed chief of the Sea Foods Division, George W. Allen, said they will engage the best possible technical advice. They hope to double and possibly triple oyster production in the next three or four years.

Younger said finances are presently holding the Department back, but that revenue from oyster shells is expected to help relieve that situation. They are in need of a marine biologist, he says. They hope to find a consultant to serve until a biologist can be hired. Allen and Younger also say a number of new work boats and repairs on existing boats are badly needed.

Shrimping Permitted in Alabama Outside Waters

Shrimping in Alabama's outside waters and in portions of the Mississippi Sound were opened recently according to a State Conservation Department announcement. William C. Younger, department director, said he had been informed by sea foods division chief George W. Allen that repeated trawl samples of shrimp in the area being opened revealed large commercial sized numbers.

Younger said the general practice of the sea foods division is to keep all areas closed, until shrimp in the bay are large enough to harvest. Areas specifically opened to night shrimping include part of the Mississippi Sound west of a line running from Barron Point to Dauphin Island beacon, to the west end of Dauphin Island woods. This is exclusive of the waters permanently closed in Portersville Bay.

Other areas are Perdido Bay and Little Lagoon in Baldwin County, except waters east of a line between Willett Point and Trout Point. Areas opened to both daytime and nighttime shrimping include all outside territorial waters of Alabama.

Alabama To Dredge Perdido Channel

Dredging of a 100-foot wide channel through Alabama's Perdido Bay Pass was scheduled to begin last month. The channel is to be ten to twelve feet deep and 3,250 feet long. Chairman, John Hadley of Baldwin County, said the joint County-State project has long been sought by commercial fishermen of the Perdido Bay area. Cost of the project will depend on the time needed, estimated to be thirty days. The State Conservation Department is to share eighty percent of the cost, with Baldwin County assuming twenty.

New Bayou La Batre Seafood Plant

A new plant has been added to the Bayou La Batre, Alabama, seafood industry with the beginning of a crab processing operation. An addition to the Ramos Shrimp Co., the new plant will also process raw, frozen, and breaded shrimp and vacuum packed dressed fish. Joe Ramos, owner, said 1,400 pounds of crab meat were processed the first day and the company expects to put out more than 5,000 pounds daily in the future.

Red Snapper Research in Gulf

A total marketable catch of 19,166 pounds of snapper and 2,305 pounds of grouper was taken in 18 days of recent Gulf trawling operations by the Bureau of Commercial Fisheries research trawler, *Silver Bay* of Pascagoula, Miss. The vessel was conducting simulated commercial red snapper trawling on the Campeche Bank.

Operations were confined to three areas in the vicinity of Cay Arcas where concentrations of snapper had been previously located. A total of 97 trawl stations were completed in depths ranging from 21 to 55 fathoms.

The catch was comprised of five species of snapper and six species of grouper. Approximately 75 percent of the catch was comprised of American red snapper.

Mexican Gulf Shrimp Conservation

The Mexican government has advanced in the conservation of the Gulf shrimp industry. A voluntary agreement has been reached by cooperatives and shrimp processors in Cuidad del Carmen and Campeche for a two month closed season which was scheduled to last until June 1 in an area extending nine miles offshore. Regulations were posted with penalties for violations by fishermen, boat owners and processors.

NORTH ATLANTIC

Antibiotic Tests To Be Made By Maine Fishermen

An antibiotic to keep fresh-caught fish in sound condition has been scheduled for testing by commercial fishing fleets off the Maine coast. In mid-April, the Federal Food and Drug Administration set safe limits on amounts of the antibiotic that may remain in sea foods without harm to the consumer.

Initial tests of the antibiotic—a commercial form of Aureomycin called Chlortetracycline—were made on draggers of the General Foods Birds Eye Division out of Rockland in 1956 and out of southern ports. Edward Kline of the American Cyanamid Company, who conducted the Rockland tests at that time, and Thomas B. Hagerman of the same company are visiting various fleets and independent boats, setting up the trials.

The antibiotic has been used since 1955 in uncooked poultry and may now be used in fresh caught, whole, headed and gutted fish, shucked scallops and unpeeled shrimps. It will not be used on fish after processing.

As far as safety of consumption is concerned, Kline said the antibiotic is one of the more modern "miracle drugs" in common use by doctors. Cooking the fish destroys almost 100 per cent of it. One common medical capsule of the material is sufficient to treat 700 pounds of fish—and at the national rate of fish consumption, a person would have to live to be 100 years old to eat the equivalent of one medical capsule.

Two Carriers Get Radar

Southwest Boat Corp., Southwest Harbor, Me. has installed Lavoie Bat 5 radar equipment on two sardine carriers. They are the *Edward M.*, owned by Belfast Packing Co., Belfast, Me. and the *Continental*, owned by Addison Packing Co., Southwest Harbor.

Power for operating the radar is supplied by new 1500-watt, 110-volt, 60 cycle AC, remote control, gasoline-powered Kohler generating plants. The equipment was sold through The Harris Co., Portland.



"MARIE H", whiting dragger and seiner, of Port Clyde and Portland, Maine is owned by Levi Hupper and is powered by a General Motors 4-71, 110 hp. Diesel.

Maine Maritime Academy Increases Enrollment

The Maine Maritime Academy will increase its enrollment to 330 students with the incoming class this fall, Ralph A. Leavitt, President of the Board of Trustees has announced. Normal enrollment of 230 students will be increased to 330, due to the increased desire for young men to obtain the type of education offered at the Maine Maritime Academy.

Over 280 applications have been received to date, Leavitt said, and an estimated 150 more are expected before applications will be cut off, August 1.

The Academy will also enter into a four year course, beginning with the entering class of 1960, according to Leavitt. The Academy recently announced the introduction of a Nuclear Power Course that will be offered to all students following the training cruise in 1960.

To Urge Maine Harbor Improvements

Maine's Sea and Shore Fisheries Commissioner Ronald W. Green went to Washington, D.C., recently as a delegate to the 46th National Convention of the National Rivers and Harbors Congress.

Green, with A. Edward Langlois, Jr., general manager of the Maine Port Authority, was scheduled to speak in favor of the proposed harbor improvement projects for Maine before the Congress's projects committee.

While in Washington, Green planned to meet with members of the Maine congressional delegation, to discuss pending federal fisheries legislation. In addition, he intended to confer with top officials of the U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries, regarding joint state and federal research projects and other fisheries programs.

The National Rivers and Harbors Congress projects committee was meeting to consider individual harbor improvement projects for all parts of the nation prior to making recommendations to Congress.

Early Start For Maine Sardine Season

The sardine season in Maine got off to an early start this year, with the receipt of 475 bushels of herring at the Holmes Packing Corp., Rockland. Bringing in the first catch was Capt. Sherman Lord of the *Jacob Pike*. The *Jacob Pike* was followed by the *Mary Anne*, with Capt. Elliott Wotton delivering 850 bushels.

At Port Clyde, Cpts. Donald Wilson and Clyde Peabody of the carriers *Nereid* and *Delca* landed a total of 1000 bushels to open the Port Clyde Packing Co. Both catches were taken from seiners fishing in Boothbay and Casco Bay, where the heaviest concentration of herring have been found. The season started 14 days ahead of last year, when packing began June 16.

Maine Boats Repowered By Harbor Supply

Capt. Gordon Robbins of McKinley, Me. is repowering his 36' lobster boat at Harbor Supply Oil Co., Portland. The new engine is an 85 hp. Model DAMR-273, with 1.5:1 Capitol Model 2HE hydraulic reduction gear and Ross heat exchanger.

Harbor Supply has sold a Model 220 Flagship engine with 2:1 Paragon hydraulic gear to Capt. Milton Doughty for his 35' Portland lobster boat. The Company furnished a 65 hp. Red Wing Meteor engine with 2:1 Paragon reduction gear for Capt. Milton Philbrook's 32' lobster boat at Matinicus, Me.

Hubbs Handling Lister In Maine

Lister-Blackstone, Inc. has announced the appointment of Hubbs Engine Company as their Distributor for the entire State of Maine. They are located at 141 Main Street in South Portland where engines, parts and service are available. This branch is under the management of Charles McDonald.

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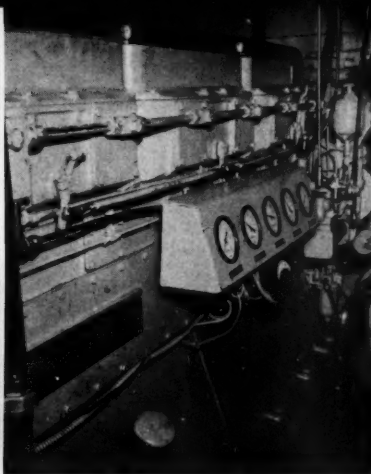
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New Bedford, Mass. scalloper "Nancy Jane" and her new 350 hp. Enterprise Diesel. In front of pilot house is her skipper, Capt. Wm. Fiedler, left, and Capt. Anthony Ellen, owner.

New Bedford Scallop Dragger "Nancy Jane" Repowered

A well-known member of the New Bedford, Mass. scallop fleet, the *Nancy Jane*, landed her first trip since repowering when she unloaded 11,000 pounds on May 23, following a highly successful voyage to Georges Bank. Owned by Capt. Anthony Ellen and skippered by Capt. William Fiedler, the 70-foot vessel had a new Enterprise Diesel installed at Peirce & Kilburn Shipyard, Fairhaven, Mass.

The new power plant is a Model DMM-361 turbo-charged Enterprise, rated 350 hp. at 900 rpm., equipped with Snow-Nabstedt 2.59:1 hydraulic reverse-reduction gear and Westinghouse Tridyne pilot house controls. A

56 x 44 Columbian 3-blade propeller is presently used, but a larger wheel is contemplated.

The new engine has over double the output of the vessel's previous engine, and makes the *Nancy Jane* one of the highest powered craft of her size in the New Bedford fleet. New fuel tanks were installed either side of the engine room, with total capacity of 3200 gallons. The scalloper has a Lister Diesel auxiliary unit with compressor, pump and generator, and carries a Hathaway winch.

Captain Ellen has been a fisherman for 30 years and has owned four fishing boats during the past 25 years. In addition to the *Nancy Jane*, he now owns the 55' dragger *Winifred M.* which groundfishes out of New Bedford. Ellen had the *Nancy Jane* built by Harvey F. Gamage Shipyard at South Bristol, Maine in 1950, and during the year prior to repowering she landed 220,000 lbs. of scallops in 22 trips.

Harbor Supply Has American Marc

Harbor Supply Oil Co., Inc. of Portland, Me. has been appointed State-of-Maine distributor for American Marc Diesels. The line includes air and water-cooled, electric starting Diesel generator sets and marine engines in one-cylinder, 7½ hp. and two-cylinder, 15 hp. models and 3 and 5 kw. capacities.

The American Marc generator units are available in various AC and DC voltage ranges, and may be used for lighting and battery charging, and as industrial plants. The marine engines have reverse gears and are available with 2:1, 2.5:1 and 3:1 reduction gears.

Harbor Supply also handles Allis-Chalmers Diesels, Flagship marine engines, Red Wing Diesel and gasoline engines, Pioneer Gen-E-Motor gasoline generator units, and Winpower generators and generating sets with air and water-cooled gasoline power and water-cooled Diesel power.

Propose Changes in R. I. Lobster Laws

Passed by the Rhode Island House and sent on to the Senate was a bill to make several changes in the state's lobster laws. The measure would eliminate the section which presently gives half the fine imposed on a violator to the informer. It would also change the expiration date of licenses from November 15 to December 31. These and other changes are advocated by the Department of Agriculture and Conservation.

Vetoes Rhode Island Striped Bass Bill

Rhode Island Governor Del Sesto vetoed the controversial striped bass bill recently. The bill, strongly opposed by commercial operators, would prohibit the

seining of striped bass in any of the state's territorial waters, forbid the placing of fish trap leaders within 100 feet of the shoreline September 1 to December 1, and limit the daily catch to six.

New Auxiliary Engine for "Tina B."

A new Model HA2, 20 hp. Lister Diesel was installed recently on the 75' Gloucester, Mass. dragger *Tina B.* while she unloaded a catch at Fulton Market, New York. The installation was completed by Rudox Engine & Equipment Co., Secaucus, N. J. 24 hours after it was ordered by Captain-owner Simplicio Bichao. The new unit was connected to existing air compressor, generator and pump.

Royal Toner, Oyster Industry Leader

Royal Toner, Greenport, N.Y., one of the world's largest oyster growers, died last month after an extended illness. He began his business career as secretary to John Wanamaker, the department store executive. On his doctor's advice to get outdoors more, Toner took a position as bookkeeper at the Fulton Market. Later he and a friend branched out on their own, forming the Lester & Toner Co.

One of the strongest advocates of promotion of oysters and seafoods products generally, he never lost an opportunity to plug the industry. He was the first to register a trade mark for an oyster and the first to ship them to the West Coast. He was vice president of the Oyster Institute of America and past president of the National Fisheries Institute. He owned three oyster companies: the Greenport Oyster Co., Seapure Oysters Inc., and Lester and Toner Co. Recently he had turned a fourth, in the Fulton Fish market, over to its employees.

Federal Dredging Requested For Gloucester Harbor

A new brief, asking for Federal dredging of the Gloucester Mass. Harbor, is being drawn up by Everett R. Jodrey and Chamber of Commerce manager Larry Hart. According to Jodrey, the brief is an up-dating of one submitted to a public hearing in November of 1956. At that time, the Harbor Improvement Committee asked for dredging to 20 feet in the main channel and north of the Gloucester Fish Pier, and in Smith Cove.

The city subsequently asked for a channel from the Outer Harbor through Western Harbor and Blynman Canal for deep-draft vessels, in line with a proposed port development in the canal.

The idea of such a development was abandoned, because of the \$20 million cost. The city has now decided to return to its original request, increasing the depth from 20 to 22 feet in the main channel and north of the fish pier, with a deletion of the Smith Cove project.

In a recent letter to U.S. Rep. William H. Bates, Brig. Gen. Alden K. Sibley, Division Engineer with the U.S. Army at Waltham, said that hydrographic and probing surveys have already been completed. He announced that economic and engineering studies are now underway.

Gloucester is the only place between Portland and Boston where a ship can come in for shelter, Jodrey said. Dredging would permit larger ships to come in with fish and would help centralize the fishing industry in Gloucester.

Meanwhile, the Gloucester Seafood Workers Union is conducting an intensive campaign to urge the House Ways and Means Committee to report favorably on Gloucester's half-million dollar dredging proposal.

The union's 1,200 members are sending the committee signed post cards asking for the dredging. The cards will be mailed together, at the time they will do the most good.

Record Round Whiting Catch Landed At Gloucester

Nineteen Gloucester, Mass., draggers arrived recently with 1,183,000 pounds of round whiting. Six firms bought what is believed to be a record day's supply of this fish. The whiting were possibly saved from perishing by State Department of Labor and Industries action.

Commissioner John A. Callahan granted permission to four Gloucester firms allowing the women employees to work 12 hours that day, rather than the customary eight. The law states that extra hours cannot be granted for processing of fish trucked into Gloucester or landed by other than the customary fleet supplying Gloucester.

Gloucester Tops Million Five Days

Gloucester, Mass. landings during May totaled 17,176,700 pounds, with over one million pounds landed on each of five days. Eighteen vessels brought in 1,102,000 pounds on the 7th; Seventeen vessels landed 1,197,000 on the 8th; landings on the 11th of the month totaled 2,315,000 pounds for 28 boats; twenty craft arrived on the 14th with 1,094,500 pounds; and on May 25, fifteen vessels unloaded 1,422,000 pounds. The Gloucester fishing boat, *Ocean Life*, brought in 430,000 pounds of fish on the 22 of May.

Boston Reports First Mackerel

The first mackerel report of the season was received May 19, when the gill netter, *Salvatore*, arrived in Boston with 600 pounds of fish.

New Bedford Fish Landings Show Great Increase In Size, Value

Landings of fish at New Bedford, Mass., during the first third of 1959, show major increases in both poundage and value over the same four-month period of 1958, the U. S. Fish and Wildlife Service announced yesterday. And, the year 1958 was one of the best for the city's fishing industry since World War II. Statistics show that through April 23, 104,000 pounds of food fish, sea scallops and industrial fish were landed there. Value of the catch was \$4,758,000. During the same period last year, 21,548,000 pounds of fish and scallops, valued at \$3,678,000, were landed.

Sea scallop and cod landings were mainly responsible for the upswings. Through April, 4,319,000 pounds of scallops, valued at \$2,565,000, were landed, compared with 3,843,000 pounds, valued at \$1,852,000, landed during the same period last year. The U. S. Fish and Wildlife Service reports that good fishing weather and the finding of two sizable beds of scallops, within a short distance of New Bedford, accounted for the increased landings.

Cod landings have increased from 748,000 pounds during the first third of 1958 to 2,145,000 pounds this year. Value is up from \$64,000 to \$220,000.

Industrial fish landings don't really hit their peak until the red hake arrive in Southeastern Massachusetts waters. The hake showed up about May 1, and during the first week, approximately 4,600,000 pounds were landed, equaling the entire industrial fish catch for the first four months of the year.

The largest fish haul for the year was landed at New Bedford, Pier 3, May 18. A total of 483,800 lbs. of fish and scallops was recorded by 26 vessels. Breakdown showed 15 scallopers landed 164,900 lbs. of scallops and 11 draggers netted 319,900 lbs. of fish.

Modesto, Seafood Producers Manager

Octavio A. Modesto has been named general manager of New Bedford (Mass.) Seafood Producers Association, succeeding John F. Linehan, according to an announcement by the association's board of directors. The appointment takes affect on or about June 1. Linehan, who served as general manager since 1951, resigned to accept a government position in Korea.

Seamanship and Net Repair Course Offered New Bedford Fishermen

New Bedford, Mass. fishermen will soon be able to take a free 60-hour course in seamanship, and net manufacture and repair at New Bedford Vocational High School. Announcement, of the course to be financed jointly by city and Federal funds, was made in Mayor Lawler's office recently. Z. Walter Janiak, director of the school, said a list of interested fishermen has been compiled and he hopes to start the course in June.

The Federal Government has agreed to put up \$5,000 for the project under the Kennedy-Saltonstall Fisheries Act. Lawler said the city's \$5,000 would probably come from the general expenses budget of the Vocational High School; thus eliminating immediate need for an appropriation.

Harold Nickerson, owner and captain of the dragger *Molly Jane*, is to be an instructor for the course. He has already been approved for this post by the State Department of Education.

The course will cost about \$2,000 to \$2,500 to set up, and about \$100 to \$125 a week to operate, Mr. Janiak said. There will be no cost to those taking it, he emphasized.

The minimum number of "students" needed to keep the course operating is 12. This will be the first such course in Massachusetts and the second of its kind in the nation.

PACIFIC COAST

Limited Salmon Fishing Permitted in Bristol Bay

Secretary of the Interior, Fred Seaton, announced a short time ago, a change in the department's Alaska fishery regulations. Limited commercial fishing for red salmon in Bristol Bay, Alaska, will be permitted this year. Seaton said he authorized the change after a review of the situation, in light of recent developments. This included discussions with Japanese regarding the high seas fishery.

The new regulation will permit limited commercial taking of red salmon in each of the major districts of the Bay. Both drift nets and set nets will be permitted. Weekly fishing periods will be determined by the amount of gear registered.

Seaton has been informed by the Bureau of Commercial Fisheries that the high seas fishery will be less intense, generally, than last year. He has also been informed that the total quota of the Japanese fishery has been reduced. With respect to red salmon, the quota throughout the area has been dropped from 11 million to 8 million fish this year.

Pink Salmon Research Stepped Up

An accelerated research program on pink salmon migrations is being organized by the International Pacific Fisheries Commission, the Washington Department of Fisheries, and the Fisheries Research Board. Pinks will be tagged at the mouths of Puget Sound rivers and at Bush Point. The international commission will tag fish in waters under its jurisdiction and the Pacific Biological Station at Nanaimo, B. C. will tag pinks in British Columbia waters.

Court Upholds Alaska Trap Ban

The U.S. Court of Appeals, last month, upheld the Interior department order banning the use of salmon traps in Alaskan waters. The ban had been opposed by a group of Washington salmon canning firms in a hearing before District Court Judge, John J. Sirica who ruled the government ban legal. Assistant U.S. Attorney Jerome Cohen said that Secretary of the Interior Fred Seaton, who ordered the ban, was bound by Alaskan law prohibiting fish traps.

To Expand Washington Fish Laboratory

Washington representative Thomas M. Pelly announced that the Fish and Wildlife Laboratory in Seattle is to be expanded. The expansion had previously been indicated in testimony by Andrew W. Anderson, assistant director of the F&W Service, before a House Merchant Marine and Fisheries Sub-committee.

Anderson said the department has given priority to additional space and facilities for the Montlake project, rather than constructing a new saltwater research lab.

Tagging Crabs in Bristol Bay

The United States and Japan are tagging king crabs in Bristol Bay, Alaska, and in the Aleutian Islands. They are trying to determine if regulations should be set to protect the crabs. During a single month, divers have captured and measured 1,350 small kings at Unalaska and conducted molting observations on 150 others. Later in the year they will study growth rates. In the last five years biologists of the U.S. Bureau of Commercial Fisheries in Seattle, Wash., have tagged 30,000 crabs.



"The Commando" is a 67' otter trawler used by the University of Washington College of Fisheries as a research vessel. She is used for studies in Puget Sound, the Strait of Juan de Fuca, and around Alaska.

Open House at Washington Fish College

The College of Fisheries at the University of Washington held an open house a few weeks ago. Also open for public inspection were the research vessels *Brown Bear* and the *Commando*. The College of Fisheries was started in 1919, with its aims and character borrowed largely from Japanese fisheries schools.

With emphasis on technology, the college developed along the lines of a trade school. In 1930, the college was made a school under the direction of Dr. W. F. Thompson. Reorganizing the curriculum, a new field of fisheries biology was emphasized. In January 1958, the school was again a college under Dr. R. Van Cleve, director of the school since 1948.

The college ranks among the best institutions in the world for training in fisheries biology. It is the only educational organization that includes technology, marine fisheries biology, and fresh water biology in its curriculum.

Sockeye Fishing Closures Seen By Washington Director, Moore

Commercial fishermen were told recently by Milo Moore, Washington state fisheries director, that fishing times for sockeye may be sharply curtailed in the coming season if adequate runs fail to develop. Moore said the International Pacific Salmon Fisheries Commission has warned that emergency closures may be necessary to conserve the fish.

The warning was given at a hearing by the State Department of Fisheries on proposed fishing regulations for the 1959 season. Plans to limit commercial fishing to four days a week in most areas were protested by purse-seine fishermen.

Moore emphasized the need to get more fish up the Snohomish and Stillaguamish Rivers for spawning. He said the number of spawners in those rivers was far too small last year. Don Smith of the Bellingham area protested regulations which he said are more restrictive on white fishermen than on Indians. The Lummi Indians, according to Moore, have been among the most cooperative of any group. He added that the state's powers to restrict Indian fishing are legally weak.

Washington Department Gets New Boat

A 75-foot, former Fish and Wildlife Service vessel has been undergoing preparations for service with the Washington Department of Fisheries. The new addition to the fleet, the *Pelican*, is twice as long as any of the other six patrol boats used for salt-water duty. Paul Franulovich of Anacortes, supervisor of exploratory fishing for the department, will be skipper and Art Phillips will be the engineer.

Seattle Fleet Landings Increase

Halibut fleet landings in Seattle, Washington, for May totaled 5,620,700 pounds, an increase of 522,700 pounds over May 1958. Largest single day's landing occurred May 18, with a total of 1,073,000 pounds of fish being landed by 19 boats.

Otter trawl landings for May showed 1,688,800 pounds for a 311,600 pound increase over the same month last year. Largest single species was true cod with 661,400 pounds compared to 428,500 in May last season. All sole species accounted for 564,100 pounds against 386,900 in the same period of 1958. Petrale sole led the group with 273,800 pounds or 89,500 pounds greater than last May.

Need \$150,000 For Washington Fish Food

The thousands of tiny salmon at the Washington state fish farms need plenty of food. According to Milo Moore, state fisheries director, his department may need an additional \$150,000 to feed the fingerlings. The money presumably will have to come from the governor's emergency fund.

Pacific Oyster Growers to Meet

Seattle, Washington has been named as the convention city for the Pacific Coast Oyster Growers Association annual meeting to be held August 26-28. Members from Alaska, Canada, California, Oregon, and Washington will attend.

Opposes Pacific Coast Shark Bounty

The Bureau of Commercial Fisheries reiterated its opposition recently to a bounty program aimed at eradicating dogfish sharks in Pacific Northwest and Alaska waters. A. W. Anderson, assistant director, told a Senate Commerce Committee sub-committee, it would be preferable to permit the Bureau to charter vessels for a control program in selected areas.

This, Anderson said, would allow a more efficient operation by permitting follow-up inspection to evaluate results. Under a simple bounty program, he felt fishermen would catch dogfish only when they could get nothing else.

Egan Opposes Native Alaska Fish Traps

Governor William A. Egan of Alaska said, recently, that all fish traps in Alaska should be banned, including those operated by natives. The Interior Department rules for 1959 fishing state that a few traps operated by natives would be permitted. Egan said he believed that the majority of natives were opposed to trap operations. He added, if any traps are operated in the coastal waters, steps will have to be taken against them.

Anderson in Alaska Fish Post

Clarence L. Anderson, who has been head of the Alaska Department of Fish and Game, was appointed Alaska's first commissioner of fish and wildlife by Governor William A. Egan according to late reports. Anderson was with the Washington Department of Fisheries six years, before going to Alaska.

Alaska Fish Management Transfer Approved By Interior Department

Secretary of the Interior Fred Seaton took recent action to assure transfer of the administration of fish and wildlife resources in Alaska to the new State. In letters to Congress, Seaton certified that Alaska's State Legislature has made "adequate provision for the administration, management, and conservation of the fish and wildlife resources of Alaska in the broad national interest."

The Alaska Statehood Act provided that this responsibility would be retained by the Federal Government until the first day of the calendar year following expiration of 90 legislative days after the Secretary's certification.

Joint Sole Tagging Program Completed By Oregon Group

The Oregon Fish Commission biologists have just completed a joint sole tagging program with the Bureau of Commercial Fisheries. The tagging, carried out aboard the Bureau's research vessel *John N. Cobb*, was conducted off the Oregon coast in the vicinity of Manhattan Beach and Ocean Lake. The operation is apparently one of the most successful bottom-fish tagging experiments ever conducted on the Pacific coast.

A total of 5,102 tags were released on two weeks of fishing. Of that number, 4,565 were placed on English sole and 537 on petrale sole. Biologists from the Oregon Commission hope the tagging will assist in determining the sizes of English and petrale sole populations off the Oregon coast, as well as delineating migrations of the species.

Salmon Released in Oregon River

More than 39 million fall chinook fingerlings were released into the Columbia River by Federal hatcheries operated by the Fish and Wildlife Service, according to a recent Department of the Interior announcement. The hatcheries located at Carson, Willard, Spring Creek, and Little White Salmon, Wash., made the release from a record 117,000,000 egg take last October.

Previously, unfed fry numbering 36 million were released into the Columbia and its tributaries. All releases were made during hours of darkness, when predators were less active. The recent release of 39 million tipped the scales at 75 tons and had been fed for 30 to 90 days.

The Corps of Engineers at Bonneville dam cooperated by manipulating the fish screens there so as not to hinder the downstream movement of the fish. Some of the current release of fed fingerlings have been marked as were some of the unfed fry. When the run returns, biologist will be able to evaluate the survival in relation to the time of release, whether the fish were fed or unfed before release, and the best size for release.

California Converted Bait Boat Proving Successful as Seiner

The tuna seiner *Southern Pacific*, one of eight San Diego bait boats converted to seining, has made six prosperous trips since its change over late in 1958. She has averaged 220 tons of tuna, mostly yellowfin and bluefin, each trip. As a bait boat, the *Southern Pacific* had been averaging trips of two to three months duration.

Lou Brito and crewman John Silva, part owners of the vessel, credit the development of nylon nets and a new Puretic power block for making conversion practical. Nylon nets are more compact and last longer, while the power block speeds up the hauling and stowing process.



THE CAPTAIN SPEAKS —

Captain-Owner Dominic Novello says:

"Since I installed a Waukesha 315 hp engine in the "JBN" I haven't had a bit of trouble with it. It performs perfectly, maneuvers very well, is economical on fuel and gives me plenty of power. It's a good clean engine. *I would certainly recommend it to any fisherman who wants power plus dependability.*"

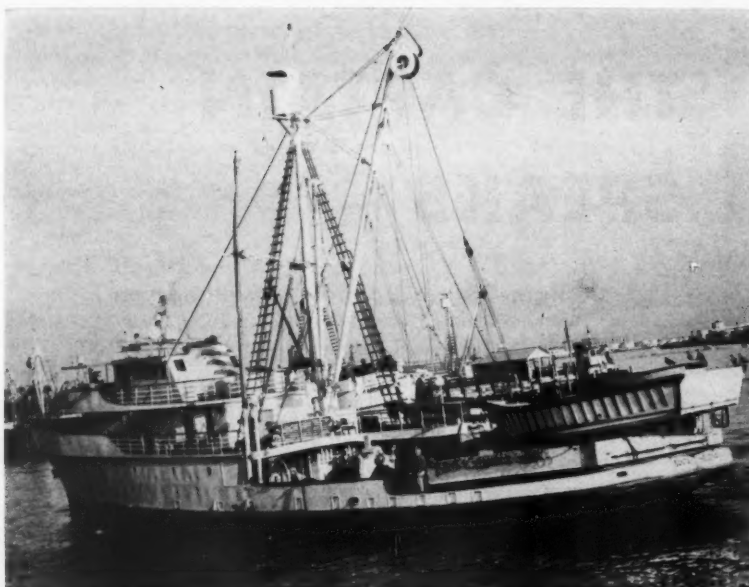


428

78' dragger "JBN"
is powered by a
WANDERER
WAUKESHA
MARINE DIESEL

One of six brothers all fishing out of Gloucester—Captain-owner Dominic Novello recently repowered his 78' dragger "JBN." He picked a Waukesha Wanderer, 1905 cu. in. Turbocharged Diesel, 6-cylinder, 7" x 8 1/4", 315 max. hp at 1200 rpm for 24-hour duty; with 3:1 Snow-Nabstedt reverse reduction gear. The "JBN" also has an Ingersoll Rand air starter; Ross heat exchanger; 54 x 43 Columbian Bronze propeller; forward power take-off clutch is a Snow-Nabstedt 2:1 red. gear. Installation was made by Hathaway Machinery Co., Inc., Fairhaven, Mass. Read again what Skipper Dominic says about his Waukesha, then send for Bulletin 1720.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
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 Factories: Waukesha, Wis. and Clinton, Iowa



Recently converted to seining, San Pedro boat "Santa Helena" is powered with an Enterprise DMQ-8, 1000 hp. Diesel. The 136' vessel is equipped with Bendix direction finder, Bendix depth recorder, a Puretic hydraulic power block and Momoi Marlon netting.

Government-Industry Tuna Meeting Attended By California Leaders

More than 150 key officials of the California fishing industry were in attendance at the Government Industry Tuna Meeting at Scripps Institute of Oceanography May 19-21. The meeting discussed world tuna resources, fishing methods and trends, and problems of the domestic fishing industry from the view-points of both fishermen and cannerymen.

Leading the representatives of fisheries associations, unions, cannerymen and fishermen's cooperative associations were director Donald McKernan of the Bureau of Commercial Fisheries and director Don Johnson of the Bureau's California Field Stations and his field officers.

San Diego Auction Breaks Deadlock

San Diego, Calif. boats sold over 4,000 tons of fish at auction within a few days during the middle of May, to break a deadlock in disposing of their catches. A fleet of 20 boats had gathered at the port for several weeks, with one clipper idling at the dock for 40 days with fish in its hold. Owners felt cannerymen preferred other than domestic catches.

Prices received ranged from 240 to 250 dollars for yellowfin and 200 to 210 dollars for skipjack. This was below the minimum price of 270 and 230 dollars asked by the fishermen.

San Pedro Blockade Ended

San Pedro, Calif., seiners lifted their blockade of two Star Kist Foods, Inc. docks recently, after talks with company officials. However, no price agreement was reached at that time, and 20 boats with 2,500 tons of frozen tuna awaited the decision.

The seiners blockaded the docks by clustering their boats together in an effort to prevent the unloading of three San Diego boats. Star Kist had purchased the cargos of the three boats at auction in San Diego for prices lower than those sought by the San Pedro seiners.

San Francisco Strike Ends

A two weeks strike by San Francisco Bay (Calif.) area salmon fishermen ended last month, when dealers agreed to pay prices ranging from 32 to 50 cents a pound for dressed fish. Several hundred, one and two man boats were idle during the dispute which arose from deal-

ers' reluctance to pale or white-flesh salmon. They claimed customers were prejudiced against such fish. In settlement, the dealers agreed to pay prices determined by size only.

California Unemployment Benefits Fixed

California Governor, Edmund G. Brown, recently signed a bill authorizing payment of unemployment benefits to partially employed commercial fishermen on a permanent basis. The system of supplementing the earnings of fishermen during lean periods when their catch is poor had been tried for two years as an experiment. During the trial, unemployment pay amounted to \$250,000 annually.

First Year of Salmon Tests Completed in California

California Department of Fish and Game scientists recently completed the first phase of their king salmon investigation. The study is being conducted to discover why the valuable fish has been declining and what may be done about it. The first experiment consisted of releasing one million salmon, 2 to 3 inches long, bearing distinctive marks, at three places in the Sacramento River. The operation began and ended in less than two months. Next year the number of released fish will be doubled. The primary purpose of the first phase is to measure differences of survival in fish released at various distances from the ocean. Effects of the differences will be measured as the fish appear in landings and on the spawning beds.

A few thousand fingerlings were transported last year from fresh water to salt water in live-bait tanks aboard a boat. Survival, then, was nearly 100 percent. Using the same method and boat, survival, this year, ranged from 30 to 90 percent. The scientists are now trying to pin down the reasons for such a wide variation.

Another group of fish were trucked directly to the salt water release site. Once there, salt water was pumped into the truck tank until the fish were in water of the same salinity and temperature as that into which they were released. Six lots received that treatment and survival ranged from 10 to 40 percent. On the other hand, survival of two groups released at different places in fresh water has averaged about 90 percent. The project is directed by R. S. Crocker, chief of the Department's Marine Resources Branch.

SHAFTING YOU CAN DEPEND ON—AT REASONABLE COST



A 3-inch Tobin Bronze Shaft being installed in a trawler at Diesel Engine Sales, Inc., St. Augustine, Fla., a leading builder of commercial fishing boats. Over the years, Diesel Engine Sales has equipped more than 800 trawlers with Tobin Bronze Shafts.



TOBIN BRONZE® Shafting has proved itself through its performance on thousands and thousands of pleasure boats, fishing and other commercial craft. It is this record of dependability that has made it first choice of boatbuilders and boatowners.



TEMPALOY® -917, nickel-aluminum bronze shafting, was developed by The American Brass Company for use requiring extra high strength. Repowering with higher horsepower engines often means replacing original shafting, too. Tempaloy frequently provides the needed extra strength with no increase in shaft diameter—saving costly alteration of bearing, stuffing box and housing assemblies. Features: toughness and high yield strength—high resistance to shock—excellent corrosion resistance—lighter weight—special straightening—close diameter tolerances—individually wrapped and trade-marked—reasonably priced.

Both Tobin Bronze and Tempaloy propeller shafts are available through leading marine supply distributors. For detailed information, see your distributor or write: The American Brass Company, Ansonia Division, Ansonia, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario, Canada.

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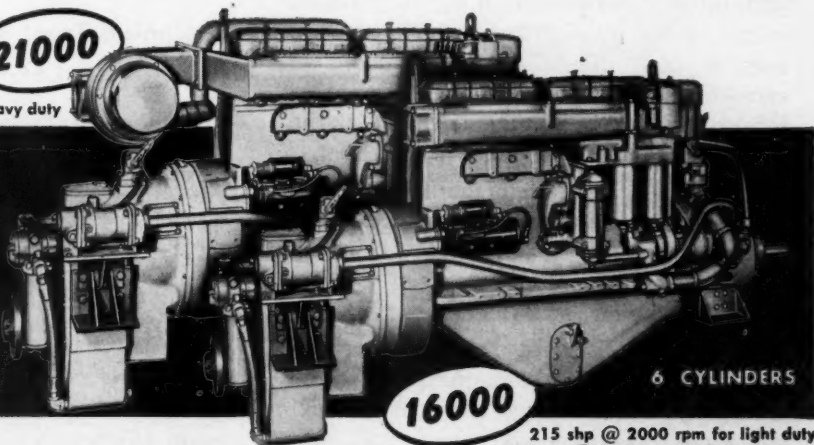
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...give "rough weather" dependability—save up to 27% on fuel

The new Allis-Chalmers 21000 and 16000 marine diesels deliver *husky working power* using 8½ to 27 percent less fuel — save 1 to 2½ gallons of fuel oil in every 10 — enable you to stay out longer and have plenty of reserve for rough weather and heavy seas.

Engines are simple to maintain — and need less maintenance. Their high *actual* shaft horsepower output is unmatched, inch for inch or pound for pound.

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JUNE, 1959 - NATIONAL FISHERMAN

29



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GREAT LAKES

Improved Trout, Whitefish Yields For Lakes Reported

In the Great Lakes area, commercial gill and trap netters were reportedly getting improved catches of lake trout and whitefish. On Lake Superior, somewhat better catches of lake trout were made this spring, compared to last year. Fewer lamprey-scarred fish were reported. Producers around Apostle Island and in the Whitefish Bay area were getting fair catches of trout. Catches of smelt and herring were also reported good. In the Green Bay Area, particularly the Bay de Noc section, catches of walleye pike were up and good catches of chub and yellow perch were reported.

Fleets operating in Lake Michigan were getting good takes of herring, perch, and chub, while yields of whitefish were light. Hauls of yellow pike were reported fair in the eastern areas.

In northern Lake Huron, whitefish yields showed improvement, while in Saginaw Bay commercial fishermen were getting good catches of chub, perch, bullheads, catfish, sheepshead and other rough fish. Herring were in good commercial quantity earlier, and perch and chub have shown increases.

Lake St. Clair netters were getting good hauls of rough fish and yellow pike. Quite a number of bullheads were taken also. Fishing on Lake Erie has picked up with catches by trap netters good on carp, perch, sheepshead, and catfish. Yields of whitefish and blue pike were fair in eastern waters. Ontario fishermen were reportedly getting good catches of perch, bass, sunfish, smelt, sheepshead, carp, and pike.

Beginning Trout Restocking In Ten-Year Lakes Program

A ten-year program to restock the Great Lakes with trout was scheduled for a June start by the Fish and Wildlife Service and the Michigan State Conservation Department. The Great Lakes Fishery Commission will oversee the program, setting an annual planting goal of 7,500,000 yearling trout in Lakes Michigan, Superior, and Huron.

About 35,000 were dated for release the first of June in Lake Michigan. Most will be a year old and range up to 5 inches long. During the middle of the month, 45,000 2 and 3 year olds are scheduled for Keweenaw and Marquette harbor release. Wisconsin and Ontario will contribute to the project by restocking in the first phase of the program.

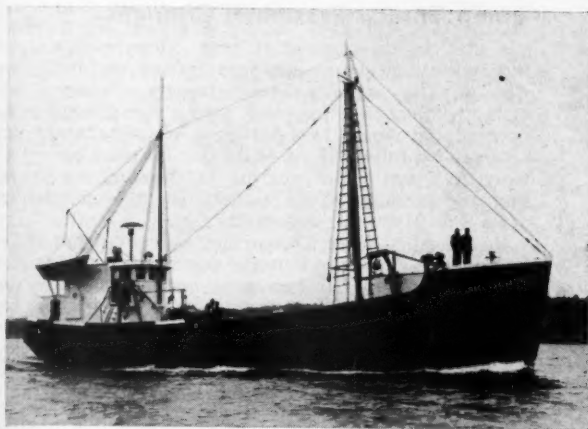
Good Michigan Smelt Season Prospect

Prospects for the 1959 fresh-water smelt commercial fishing season in Michigan waters are bright, according to a statement by the Michigan Conservation Department. The commercial catch in 1958 was more than 6 million pounds. It was the largest ever recorded, pointing to tremendous smelt populations in the Great Lakes.

Upstream smelt spawning migrations begin when water temperatures rise to about 40 degrees F., which generally comes in April. However, due to snow and ice accumulated from winter storms, water temperatures are relatively low, delaying the migrations somewhat.

Dipping success in past seasons indicates the most rewarding smelt streams are those which flow into the northern third of Lake Michigan, including the Green Bay area. The Michigan Conservation Department points out that often many small streams are overlooked in favor of the larger, more congested ones.

ANOTHER FIRST IN NEW ENGLAND



The "Grace & Salvatore", out of Gloucester, has been equipped with the Cat D397 Marine Engine and the new Cat No. 3181 Marine Gear.

CAPT. PARISI Says:

"Here is an excellent combination"

"This hydraulic gear responds much more rapidly than the air type gear. We are very happy with it."

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Lakes Research Meeting

Great Lakes research, its present and future needs, was discussed at the University of Michigan last month. A group of 100 geologists, meteorologists, fisheries experts, zoologists, hydrologists, and others from the Great Lakes states and the U. S. and Canadian governments attended. The third Conference on Great Lakes Research was sponsored by the University's Great Lakes Research Institute and Extension Service. Previous meetings had been held in 1953 and 1955.

The purpose of the two-day meeting was to find out "what the other fellow is doing" in research. Both days were devoted to status reports from various organizations. A panel discussion surveying the present, and making recommendations for the future, was held the second day. The meeting was capped by a general discussion of what can be done to implement Great Lakes research. General chairman was John C. Ayers, professor of zoology at the University and director of the Great Lakes Research Institute.

Alewife Increase in Michigan and Huron

The increase in alewife in Lakes Michigan and Huron is causing some concern among commercial fishermen and conservationists. In 1957, 33,625 pounds of the fish were taken from Lake Michigan. An additional 1,868 pounds was removed from Lake Huron according to Michigan Conservation Department reports. Several years ago there was no mention of alewife in reports. A member of the herring family, it came to the lakes from salt water. It has little commercial value at present. The fish is a nuisance in nets and seems to be crowding lake herring.

Concern is also expressed over the presence of gizzard shad in Lake Huron. This fish also comes from salt water and is a member of the herring group.

Deepening the James River

(continued from page 12)

sequently vetoed the channel job until such a study could be made. C. J. Robin, chief of the engineering division in the district engineer's office, says the job would take three years or more, cost \$250,000 to \$300,000, and his office could not justify seeking the funds.

No Protest Recalled

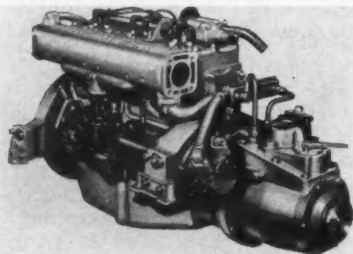
Oyster people can not recall any protest either. However, several, as well as Robin, noted that scientific knowledge has increased since that time. The fisheries lab was founded only in 1940. It was pointed out that oystering was in the doldrums during the 30's anyway; the result of a Chicago banquet, which brought an oyster scare in 1929—that on top of the depression. Health authorities shut down many of the beds in the east for fear of sewage pollution, and there was no worry over depletion, due to the lack of economic demand.

Now the problem is channel dredging and possible increased salinity. Can dilution take care of increased salt is one question. Sea water is 35 parts salt to 1,000; the river salinity range is 10-20 parts per 1,000. A 300 foot width is to be deepened, which it is estimated, would increase the cross section of the river bottom on the order of 1 percent. The river runs 3½ to 5 miles wide, but the favorable balance is narrow.

Scientists have to answer some questions, but in such unpredictable situations, observed Dr. William J. Hargis Jr., the laboratory's new acting director, they have to be conservative. A wild crop is a hazard at best. Natural forces—storm, drought, flood, wind—can upset the balance. Usually nature has a chance to restore its old conditions, but "you can't undredge a river," Hargis said.

EQUIPMENT and SUPPLY NEWS

New Gear on Chrysler Ace and Crown



The Chrysler Ace marine engine has recently been increased from 95 to 110 hp. Paragon reduction gear has been added as a regular feature of the engine.

New versions of the Chrysler Ace and Crown Marine engines are being offered by the Marine and Industrial Engine Division of the Chrysler Corporation, Detroit 31, Michigan. Lawrence E. Nelson, vice-president sales of the division, stated that the horsepower rating on the Ace has been increased from 95 to 110. Both engines will be equipped with Paragon hydraulic-reverse gear at no extra cost. The gear was previously an optional item.

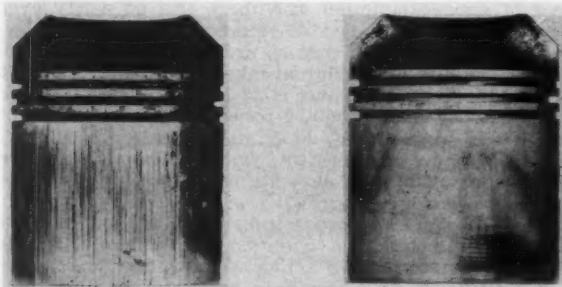
Equipping the two new engines with the gear has been made possible by the demand for recently introduced Chrysler Sea-V, which has the same reverse gear. Nelson pointed out, that because of increased sales, increased scheduling and production made it possible to provide the bonus for Chrysler Marine engine users. The 6-cylinder Crown is rated 125 hp. Complete details and specification sheets on the new engines may be obtained by writing the company.

New RPM Two-Cycle Outboard Oil

A new lubricating oil has been developed by Standard Oil Company of California, Standard Oil Building, San Francisco, Cal., for use in engines where the lubrication is supplied by oil mixed with the gasoline. The new RPM Outboard Motor Oil, for two-cycle engines only, contains a special, detergent-action additive that leaves no metallic ash when burned.

According to field tests by Standard's research arm, California Research Corp., the new product prevents piston skirt deposits and piston ring sticking under cold or hot operating conditions. During the tests it also displayed detergent properties in the combustion chamber and engine ports. The oil is credited with protecting against scuffing and spark plug fouling and rusting.

Reports also say that the oil will gradually remove water from the engine fuel system instead of allowing it to accumulate in the tank, fuel strainer, and carburetor. RPM Outboard Motor Oil, for two-cycle engines only, has been designed to keep the engine combustion chamber deposits to a minimum, thereby reducing the probability of pre-ignition.



Pistons from 35 hp. outboard motors operated 100 hours under trolling conditions. Left piston used with un-compounded oil. Right piston used with RPM Outboard Motor Oil.

Linen Thread Personnel Changes

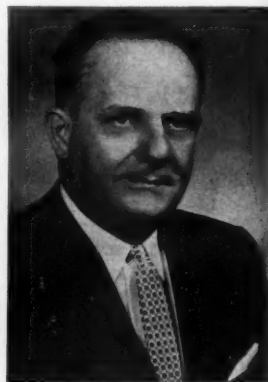
Under the direction of veteran company executives, a new growth program has been started at Linen Thread Co., Inc. The company manufactures a number of brands of fish nettings. The program, with a realignment of management personnel to put it into effect, was announced recently by Indian Head Mills Co., Inc., the parent company. As a part of the program, all the company's production and administration facilities have been centralized at its Blue Mountain, Ala. mills.

Heading the Linen Thread management team is David L. Malcolm, vice-president and general manager in charge of manufacturing. He has spent nearly his entire career with the company since joining it in 1931. The other members of the management group also have long backgrounds with the company.

Howard C. Johnson, former manager of the Chicago office, is the new sales manager. Under him in a position where he is responsible for improvements in custo-



Stewart Jenkins



Frank W. Flewelling

mer service is Ed Vierling, former branch manager in St. Louis and now manager of the sales service department. Stewart Jenkins, former assistant sales manager, has charge of the company's product managers in his new position as merchandising manager. He has the responsibility of exploring and developing new and improved marketing methods.

S. D. Richardson, long a member of the sales staff, is the thread and twine product manager. Frank W. Flewelling, who started with the company in the 1920's and has recently served as manager of sales for commercial fishing products, is the netting product manager. Other members of the management team include Richard C. Moyer, manufacturing manager; J. Howard Anderson, technical director; and Walter J. Marr, controller.

Apelco Acquires Webster Manufacturing Co.

Applied Electronics Co. of South San Francisco, Cal.—subsidiary to Raytheon Co., formerly known as Raytheon Manufacturing Co.—has purchased the assets of the Webster Manufacturing Co. of Mill Valley, Cal. The Webster firm is a leading producer of radio-telephone antennas for marine use.

T. M. Webster, founder and president, will continue as general manager. Webster antennas will continue to be marketed through their existing channels of distribution to marine and electronics dealers as well as to radio-telephone manufacturers. Apelco and Webster have worked closely together since the latter firm was founded ten years ago. Achievements in the products of one company have directly influenced the developments in products of the other.

Onan Offers New Electric Plant

Design changes have been incorporated into the new Onan 6,000-watt air-cooled, Diesel electric generating plant recently announced by D. W. Onan & Sons Inc., Minneapolis, Minn. Model 6DRN is powered by a new Onan, 13.5 hp., 4-cycle, full-Diesel engine. Dominant feature of the engine is its Vacu-Flo cooling system.

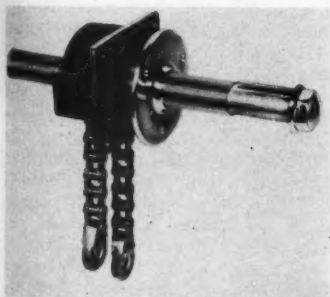
This system employs a centrifugal blower that pulls cooling air through the generator and over the heated engine parts, then expels the heated air through a duct to the outside. This enables the plant to be installed in a completely enclosed space, slightly larger than the unit and its accessories, with allowances for an air intake vent and exhaust outlet.

The 6DRN can be easily adapted to below-deck applications, when installed according to Fire Protection Standards for Motor Craft. In installations below deck, the cooling system provides engine-generator cooling plus ventilation of the bilge, engine room or compartment where it is mounted.

Edson Has New Steerer Line

The Edson Corp., 334 South Water St., New Bedford, Mass., has announced a new line of bulkhead sprocket steerers for fishing boats. The steerers feature fully machined sprockets to assure smooth silent steering and long chain life. In an effort to increase steering efficiency with a 30 to 100 percent increase in power, and to permit installation of smaller quadrants, special sprockets have been used.

Available in two models and five sizes for boats 15 to 75 feet in length, the steerers are of non-magnetic bronze and brass construction with "lubricated-for-life" bronze bearings throughout. The heavy duty models feature oversize mounting plates to evenly distribute the steering strains over large areas, chain guards to prevent chain jumping, and four inch shaft extensions for two station steering or auto-pilot operation.



New Edson Bulkhead Sprocket Steerer is available in two models and five sizes for boats of 15 to 75 feet in length.

Fishing Gear of the World

In September 1957, a major Congress, attended by 500 delegates from all fishing countries of the world was held in Hamburg, Germany, to hear and discuss over 100 papers on all types of fishing gear and equipment. On the foundation of those papers and discussions a book entitled "Modern Fishing Gear of the World" has been issued.

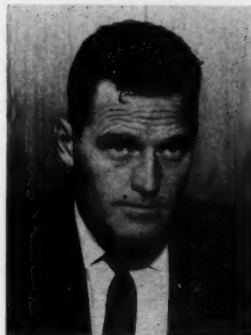
The papers range from details and values of natural and artificial fibres as used in fishing lines and net making, methods of specifying gear, the operation of all types of gear, the attraction of fish by light, to the location of fish by electronic methods. There is a chapter on electrical fishing and certain factory operations at sea.

With a total of 680 pages and 800 diagrams and illustrations, the book is a companion volume to "Fishing Boats of the World", issued after the Congress on Fishing boat design. The new gear book is edited by Hilmar Kristjansson of the Gear Section of the Fisheries Division U. N. Food and Agriculture Organization, and is published by Fishing News (Books), Ltd., 110 Fleet Street, London, E.C.4., England. The book is available in the U.S. from W. A. Augur Inc. 54 Beekman St., New York, N. Y. for \$16.50.

Wales Heads Perkins Machinery Sales

J. B. Perkins, president of Perkins Machinery Co., Inc., has announced that Ralph W. Wales, Jr. as been elected vice-president in charge of sales of the Perkins company, Needham Heights, Mass., Caterpillar Dealer. Starting in 1946 as mail clerk, Wales was transferred to the sales department where he was employed as an industrial sales representative for the firm. In 1955 Wales was appointed sales manager, and then general manager in 1956.

Wales will direct the sales activities from the main office in Needham Heights. Perkins Machinery Co. has its marine branch at 126 Front St., New Bedford, Mass. Sales activities cover the states of Massachusetts and Rhode Island on products manufactured by Caterpillar Tractor Co.



Ralph W. Wales, Jr.

Dolphin Paint Sales Appointments

General sales manager of the Dolphin Paint & Varnish Co., Toledo, Ohio, G. G. Thorne, announced recently the appointment of Richard M. Larrabee, Northport, N. Y., to represent the company for boat builders, distributors and dealer sales and service. Kenneth W. Malcolm of Haddonfield, N. J. will handle the complete Dolfinite line of marine paints, enamels, varnishes, and compounds in assisting Larrabee. Territory assigned to the new sales organization will include N. Y. and New England.

Penn Parts Representatives Promoted

According to an H. O. Penn Machinery Co. announcement, George F. Gronbach has been made field parts representative of the New York firm, covering the State of Connecticut, except for Fairfield County. He will have the territory formerly covered by Albert Brandish, who has been made parts manager for the Connecticut Branch, with headquarters at Newington, Conn.

Represent Snow-Nabstedt Gear Corp.

To further the sale of Snow-Nabstedt gears in Oregon, Washington, and Alaska, The Snow-Nabstedt Gear Corp. of 251 Welton St., Hamden, Conn., has recently appointed The A. H. Nelson Co. of Seattle Wash., as manufacturer's representative. The owner, Arthur Nelson, will work with engine distributors, Naval architects, and shipyards, which influence principally the sales of Snow-Nabstedt products.

The present distributors will be responsible for parts and service, and still may be contacted for Snow-Nabstedt marine transmission equipment. In effect, The A. H. Nelson Co. will help the manufacturer in obtaining sales and technical information from the field.

Through its new Eastern Canada representative, Russel-Hipwell Engines Ltd., the firm is increasing sales and service facilities. Stocks of gears and service parts have been placed at various branches of Russel-Hipwell Engines, which include Toronto, Montreal, Halifax, St. John's, Newfoundland, Port Arthur, Seven Islands, Quebec, and Owen Sound, the head office of the company.



Arthur Nelson



Be ready when fish are running

Don't be slowed down with a foul bottom or hauled out for repainting when the fish are there. That's the time for fishing. That's why so many smart fishermen everywhere are using "SUPER-TROP" Anti-fouling Bottom Paint, made by International Paint Company, Inc., specialists for over 70 years in the making of Marine Paints. It gives real protection against fouling of all kinds and retains its anti-fouling properties far longer than do ordinary bottom paints. Send for descriptive folder.



FOR METAL BOTTOMS
INTERNATIONAL has developed a combination of a primer and an antifouling paint that offers the maximum protection and preservation of metal bottoms. Send for the two circulars, "SILVER PRIMOCON" and "SUPER-TROP".

International BOTTOM PAINTS

International Paint Company, Inc.

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628 Pleasant St., New Orleans 15, La.
1204 So. Ridgewood Ave., Daytona Beach, Fla.

WORLD'S LARGEST MARINE PAINT MAKERS

Need for Safety, Efficiency

(continued from page 11)

Chapelle, Division of Transportation curator, Smithsonian Institute, Washington, D. C., commented that for 200 years, the accepted approach to most problems of ship design has been mathematics.

The trouble with that method is the many unmeasurable qualities. Because of them, mathematical treatment has had to be supported by approximations and assumptions. This has tended to result in over-simplification. There are also forces not readily duplicated in model tests and trials. Therefore, they have not been explored. Going further he declared, optimum hull-form for fishing boats could be a scientific study, similar to that which larger ships have received.

A boat with low initial stability has agreeable rolling motion in a seaway. There is therefore, a tendency to reduce the stability. Many United States tuna clippers and European super-trawlers have been given such low stability that a number have been lost.

Criteria are needed to determine minimum stability. Since the 1953 Congress, several naval architects have worked on the question and measured the behavior of ships. There are two factors which may cause the transverse stability of a boat to differ from the predictions of the designer, according to John Pauling, Jr., assistant professor of naval architecture and Marine Engineering, University of California.

One is trim, which occurs during heeling as a result of fore and aft symmetry and is neglected in the conventional computation of stability. The other is a longitudinal seaway, in particular a following sea, which changes the transverse stability of the vessel by altering the shape of the immersed form as compared with calm water situations.

As a consequence of peculiarities in tuna clippers geometry, heel-induced trim nearly always results in transverse stability less than predicted by conventional methods. This error is aggravated by the low freeboard aft and wide shallow after sections of normal, broad square-stern tuna clippers.

Tradition, as well as fishing methods, determines the general arrangement of the deck. Boats of different countries may have varied layouts, while employing like methods. The Congress stressed that the naval architect should consider the savings in man power made possible by rational handling of fishing gear. Such consideration would include command of operations. A ship must respond quickly to the captain's commands in order to obtain greater catches with less effort. Engine power should give complete control and maneuverability, while commands must be transmitted to the engine as speedily as possible. The captain must also command the winches to insure efficient operation and prevent loss of fishing time.

Long Line Stowage Tub

(continued from page 16)

The hauler, controlled by a foot clutch, mounted at the rail, enables the winch operator to have a clear view of the line coming aboard. To aid in landing fish, the line is led through overside rollers mounted on the starboard side of the main deck. The droppers and floatlines are detached at this lower level.

Before leaving on a fishing cruise, baskets of mainline are knotted together and fed through the line hauler and stowed in the storage tub. No attempt is made to coil the line down uniformly but it is distributed on the bottom of the tub from one side of the tub to the other.

As the "D" rings pass through the hauler, they are caught and threaded on the setting pin nearest the winch. All rings for one basket are placed on a single pin with

Repowered with Cat Engine

Now the "Islander" is faster,
more maneuverable, and in
the winter can batter through
ice.



The *Islander*, flagship of the Shelter Island-Greenport Ferry on northern Long Island, has been repowered by H. O. Penn Machinery Co. with a Cat Diesel D342 Marine Engine—and now she's increased the number of round trips per day, is easier to dock and has more power for rough going. The Cat develops 225

HP at 1300 RPM, and drives through a Twin Disc hydraulic clutch gear. She turns twin four-blade 40" x 26" bronze wheels to propel the *Islander* at 10 knots. And she's backed by H. O. Penn Machinery Co. parts and service facilities *plus our reputation!*

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We say this about shrimp rope just as easily as we say it about trawling and purse seine rope. They all come under the heading of Roebeling Special Galvanized Fishing Rope, and everything we say about it is *true*. Your distributor will show you and so will we: Wire Rope Division, John A. Roebeling's Sons Corporation, Trenton 2, New Jersey.

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For the Party Boat

The Kaar 248 is another new voice of the sea by Kaar. It's a deluxe 55 watt, 5 channel unit with broadcast band reception. The unit itself measures only 9" by 13" by 10 1/2" and has a separate power supply for operation off 6/12, 32 volts DC or 117 volts AC. The cabinet is finished in driftwood grey with charcoal grill and hood; chrome hood optional at extra cost. It meets government specifications for "party boats" and Canadian D.O.T. specifications. Squelch control, bulkhead or table-top mounting, and a removable hood for easy servicing are among the features.



Other dependable voices of the sea by Kaar include:

37B, 44 watts, 5 channels
242A, 100 watts, 6 channels
222A, 150 watts, 9 channels



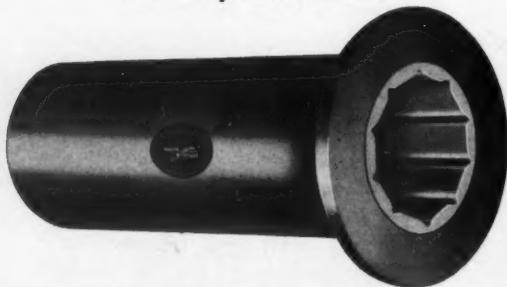
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the cloverleaf knot, marking the end of the basket, looped on top. The tub is then turned by hand, until an alternate pin comes in line with the winch. Rings of successive baskets are threaded on alternate pins to prevent lines from piling up too much in one place. After the tub has made one complete revolution the process is repeated until three layers of 33 baskets each are in place. The tub is then covered by a tarpaulin to keep the line from being disarranged before setting.

When setting the gear, the vessel is steered on a desired course at speeds up to nine knots. The tub is turned until the setting pin of the top basket lines up with the center of the setting trough. The end of the mainline is led through the setting trough. The floatline and buoy with pole are attached and the assembly is thrown overboard. Thereafter, the drag of the end basket pulls the mainline from the tub.

The hook droppers are baited with sardines or herring. The AK snap, at the upper end of the dropper, is snapped on to the "D" ring without removing the "D" ring from its pin. The dropper is then laid in the trough with the bait dangling overboard. The outgoing mainline snatches the ring and dropper from the pin and carries them overboard. Floatlines are snapped on in the same manner.

The gear is hauled in the normal fashion by running the mainline through the longline hauler and into the tub. As the droppers come aboard, the winch is stopped momentarily and the snaps are removed from the "D" rings.

These have sloping ends to facilitate stowing the coils on edge. The hooks and snaps are secured to opposite sides of the box as shown. The "D" rings are threaded on pins as described before.

"Laura A" and "Elizabeth N"

(Continued from page 15)

used interchangeably for fire, wash down and bilge service. The vessel also has a Fairbanks-Morse electric driven motor pump unit with three-way service, and an Edson 3" hand deck pump.

The full complement of navigating gear in the *Laura A.* includes White compass, Lavoie radar, two lorans, Ray Jefferson telephone, Edson reduction gear steerer, Bendix depth recorder, Columbian Rodmatic controls for the main engine governor and clutch, and pilot house controls for the auxiliary engine.

The *Laura A.* has a beam of 23'4" and draft of 12'. Future plans call for adding a turbleback, and for lengthening the fish hold four feet by moving the engine room bulkhead aft in space saved by the new engine. Maurice Gracia is engineer on the vessel, which brought in her initial catch after repowering on May 28.

The other scalloper repowered by Hathaway, the *Elizabeth N.*, has a Model LRDBCM, normally aspirated Waukesha Diesel, rated 335 hp. at 1200 rpm. This engine is fitted with Snow-Nabstedt #3774, 3:1 reduction gear and Snow-Nabstedt 2:1 power take-off. It has an Ingersoll-Rand air starter and Ross heat exchanger, operates a Worthington compressor and Marine Products pump, and swings a 56 x 39 wide-blade propeller.

The vessel is owned by Elizabeth N. Corporation, of which Napoleon T. Holmes, mate of the craft, is president. Other principals in the firm are Capt. Joseph A. Nicodemisen who is skipper, and Major Nils R. Holmes.

The *Elizabeth N.* was built by Morse Boatbuilding Co., Thomaston, Me. in 1937 for the late Capt. Frederick Nicodemisen, and has remained in the same family ever since. She has a beam of 19'6" and draft of 10'.

Following repowering this year, from March 28 through May 27, the dragger landed six full trips of scallops. She has made better than 10 knots in rough weather with wind against her.

The vessel was also equipped with a new 653 Hathaway winch, having 18" drums with capacity of 365 fathoms of 3/4" wire rope. The winch has a jack shaft with special fast winch heads for lifting the scallop drags.

Adv
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Capt
Capt
Carl
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Chri
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Com
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Frie
Garr
Gro
Harr
Hope
Inva
Jacin
Janet
Joan
John
Julia
Katie
Kelb
Laur
Libby
Lorin
Abram
Adele
Aloha
Alpar
Amel
Babe
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C. R.
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Debbi
Edgar
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Gerald
Hilda
Jerry
Joseph
Kingfi
Angie
Araho
Elin B
Ethel I
Flo (3)
Helen
John J
Little
Scall
Beatric
Carol J
David
Enterp

BOAT CATCHES

For Month of May

Hailing fares. Figure after name indicates number of trips.

NEW BEDFORD (Mass.)

Adventurer (4)	110,700	Louis A. Thebaud (4)	101,300
Althea (3)	50,900	Major J. Casey (3)	45,000
Anastasia E. (2)	46,500	Malvina B. (3)	62,500
Annie Louise (5)	61,300	Marie & Katherine (3)	47,400
Annie M. Jackson (3)	84,500	Mary E. D'Eon (3)	83,200
Barbara M. (3)	79,500	Mary J. Landry (1)	28,100
Capt. Bill II (3)	133,000	Mary Tapper (3)	117,500
Capt. Deebold (3)	75,600	Midway (3)	135,800
Carl Henry (3)	154,500	Miriam A. (3)	105,700
Carol & Estelle (3)	51,800	Molly & Jane (3)	57,300
Catherine & Mary (2)	49,000	Monte Carlo (1)	29,000
Charles E. Beckman (5)	80,400	North Sea (3)	64,400
Christina J. (3)	117,500	Pauline H. (4)	265,700
Christine & Dan (3)	63,500	Phyllis J. (3)	36,500
Comber (3)	33,700	Richard Lance (2)	67,500
Connie F. (1)	13,100	Roann (3)	64,000
Falcon (3)	72,500	Roberta Anne (2)	70,000
Friendship (3)	104,000	Robert Joseph (3)	82,300
Gannet (3)	148,700	Rush (3)	131,500
Growler (2)	75,300	Sea Gold (3)	45,300
Harmony (3)	49,100	Shannon (4)	67,000
Hope II (2)	30,000	Sharon Louise (3)	92,700
Invader (2)	84,300	Solveig J. (3)	153,500
Jacintha (2)	110,900	Stanley B. Butler (2)	111,200
Janet & Jean (3)	59,400	Sunapee (2)	33,000
Joan & Ursula (1)	31,100	Sunbeam (2)	33,300
John G. Murley (2)	104,800	Susie O. Carver (3)	43,000
Julia DaCruz (3)	54,200	Theresa & Jean (2)	98,500
Katie D. (1)	55,500	Two Brothers (2)	20,000
Kelbarsam (2)	23,000	Valliant Lady (3)	53,600
Laura A. II (3)	125,500	Venture I (3)	129,400
Libby (3)	126,500	Viking (3)	137,500
Lorine III (2)	27,300	Whaler (2)	101,000

Scallop Landings (Lbs.)

Abram H. (2)	22,400	Laura A. (1)	11,200
Adele K. (2)	22,700	Lauren Fay (3)	33,600
Aloha (1)	11,200	Lillian B. (2)	24,400
Alpar (2)	23,200	Linda & Warren (3)	31,000
Amelia (3)	23,100	Linus S. Eldridge (2)	22,400
Babe Sears (2)	22,400	Little Infant (2)	17,000
Baltic (3)	33,600	Louise (3)	35,600
Barbara & Gail (2)	22,400	Lubenray (2)	22,400
B. Estelle Burke (3)	33,600	Malene & Marie (3)	34,000
Bobbie & Harvey (2)	23,400	Mary Ann (3)	33,200
Brant (2)	22,800	Mary J. Hayes (2)	22,400
Bright Star (3)	33,400	Moonlight (2)	23,400
Camden (3)	33,400	Nancy Jane (1)	11,200
Catherine B. (2)	22,400	New Bedford (3)	33,600
Catherine C. (3)	33,600	Newfoundland (3)	33,600
Charles S. Ashley (3)	34,400	Noreen (3)	35,400
Clipper (3)	34,000	Pearl Harbor (4)	35,300
C. R. & M. (3)	29,000	Pelican (2)	22,700
Dartmouth (3)	29,400	Polaris (2)	23,200
Debbie Jo-Ann (2)	22,400	Porpoise (3)	34,600
Edgartown (3)	35,400	Ruth Lea (2)	22,400
Eleanor & Elsie (2)	22,400	Ruth Moses (3)	33,600
Elizabeth N. (3)	33,600	Sandra & Jean (1)	11,200
Fairhaven (3)	33,600	Sandra Jane (2)	22,400
Flamingo (3)	33,400	Sea Ranger (3)	33,600
Fleetwing (3)	33,600	Sippican (3)	33,600
Florence & Lee (3)	36,600	Snoopy (3)	36,000
Florence B. (3)	33,600	Stanley M. Fisher (2)	22,400
Geraldine (3)	34,600	Stephen R. (2)	23,000
Hilda Garston (3)	36,600	Ursula M. Norton (2)	23,100
Jerry & Jimmy (2)	23,000	Villa-Riall (3)	33,600
Josephine & Mary (3)	33,600	Vivian Fay (2)	22,400
Kingfisher (2)	21,200	Wamsutta (1)	11,200
		Whaling City (1)	11,200

ROCKLAND (Me.)

Angie & Florence (3)	97,000	Louise G. (5)	127,500
Araho (1)	136,000	Mabel Susan (5)	151,500
Elin B. (4)	177,000	Ocean (11)	275,000
Ethel B. (1)	1,800	Squall (2)	495,000
Flo (3)	204,500	Storm (1)	275,000
Helen Mae II (3)	181,000	Surf (1)	275,000
John J. Nagle (2)	105,000	Tide (2)	460,000
Little Growler (3)	154,800	Wave (2)	475,000

Scallop Landings (Lbs.)

Pocahontas (3)	33,000
----------------	--------

NEW YORK

Scallop Landings (Lbs.)

Beatrice & Ida (3)	33,000	Felicia (2)	22,000
Carol Jack (2)	22,000	Karina T. (2)	22,000
David A. (1)	11,000	Muskegon (3)	17,900
Enterprise (2)	22,000	Norseman (2)	22,000

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Internally Gimballed. Indirect Lighting. Bellows
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will not discolor dial; resists all temperatures from
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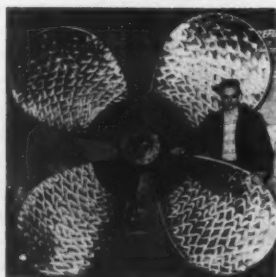
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Ave Maria (5)	30,000	Mary Ann (6)	335,500
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Holy Name (6)	270,500	St. Teresa (7)	295,500
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Immaculate Conception (7)	232,500	Salvatore & Grace (7)	318,500
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Lady of the Rosary (5)	236,000	Tipsy Parson (1)	1,000
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		Virginia Ann (6)	74,000
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Bay (3)	256,200	Ohio (2)	173,900
Bonnie (2)	208,300	Pam Ann (3)	173,500
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Buzz & Billy (3)	143,800	Phantom (2)	276,200
Cambridge (3)	303,700	Phillip & Grace (2)	153,700
Carmela Maria (4)	66,000	Pilgrim (2)	151,300
Carmen & Vince (2)	103,600	Plymouth (2)	182,600
Charlotte M. (3)	151,400	Princess (4)	26,200
Clipper (5)	150,100	Puritan (2)	106,400
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Eagle (2)	127,300	Raymonde (3)	183,400
Ethelena (4)	156,900	Red Jacket (2)	218,500
Flying Cloud (3)	358,000	Rosa B. (3)	276,300
Four (2)	143,500	Rosie (4)	51,200
Geraldine & Phyllis (2)	73,200	Rush (1)	62,000
Hazel B. (2)	149,400	St. Angelo (3)	101,000
Holy Family (1)	51,100	St. Marco (4)	129,600
Jane B. (2)	140,500	St. Nicholas (1)	102,500
J. B. Junior (2)	127,700	St. Victoria (2)	98,800
Jeanne D'Arc (2)	95,800	Salvatore (1)	600
John G. Murley (1)	59,700	San Calogero (2)	19,000
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Josephine F. (2)	12,400	Santa Rita II (2)	16,700
Josephine P. II (3)	122,500	Savoia (1)	4,400
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Lawrence Scolia (3)	36,400	Swallow (2)	135,000
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Medan (2)	165,000	Winchester (2)	79,000
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80,000	Alaska (1)	52,000	Majestic (1)	22,000
51,000	Aleutian (1)	46,000	Marconia (1)	88,000
40,000	Alma (1)	65,000	Marilee Ann (1)	25,000
19,500	Alma J. (1)	80,000	Martindale (1)	45,000
25,000	Alrita (1)	61,000	Masonic (1)	59,000
13,500	Angeles (2)	19,500	Mermaid (1)	27,500
35,500	Anne (1)	48,000	Nanna (1)	17,000
90,000	Arlice (1)	11,000	National (1)	13,000
45,000	Arne (1)	55,000	New Era (1)	62,000
24,000	Atlantic (1)	48,000	New Queen (1)	95,000
45,500	Attu (1)	63,000	New Washington (1)	70,000
52,500	B. C. Rover (1)	86,500	Nordby (1)	48,000
70,000	Bergen (1)	33,000	Norrone (1)	45,000
30,000	Bernice (1)	27,500	North (1)	59,000
11,500	Bernice R. (1)	13,500	Northern (1)	52,000
100,000	Blanco (1)	25,000	Nova (1)	38,000
3,000	Borghild (1)	20,000	Ocean Star (1)	105,000
21,000	Brisk (1)	47,000	Oceanus (1)	30,000
35,000	California (2)	67,000	Orbit (2)	45,000
32,000	Carol M. (1)	60,000	Ozzy R. (2)	42,500
99,000	Chesna (1)	68,000	Pacific Wave (1)	125,000
54,500	Christian S. (1)	29,000	Patricia Joan (1)	38,500
52,000	City of Seattle (1)	90,000	Phyllis (1)	42,000
208,000	Constitution (1)	66,000	Platinum (1)	62,000
274,000	Coolidge (1)	43,300	Polaris (1)	65,000
198,500	Daily (1)	40,000	Regina (1)	45,000
36,000	Dean (1)	19,000	Republic (1)	64,000
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281,000	Estep (1)	40,000	Sanak (1)	55,000
285,500	Ethel S. (2)	90,000	San Juan (1)	60,000
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295,500	Guardian (1)	54,000	Sea Master (1)	75,000
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199,000	Ilene (1)	63,000	Soupin (1)	77,000
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270,000	Irene G. (1)	63,000	Susan (1)	67,000
415,000	Jane (1)	25,000	Swift II (1)	10,000
65,000	J. B. (1)	27,000	Sylvia (1)	38,000
1,000	Karen T. (1)	65,000	Thor (1)	60,000
225,000	Lady Olga (1)	60,000	Tongass (1)	65,000
88,000	Leviathan (1)	48,000	Trinity (1)	60,000
74,000	Lloyd (1)	21,500	Vigorous (1)	65,000
223,000	Lorelei II (1)	63,000	Vivian (1)	72,000
209,200	Lualda (1)	63,000	Western Girl (1)	125,200
307,800			Yakutat (1)	58,000
208,100			Zenith (1)	60,000

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6,300	Alton A. (2)	34,000	Mascot (3)	11,400
260,100	Andarte (1)	102,000	Ocean Life (1)	215,000
173,900	Ariel (2)	6,000	Quincy (2)	362,000
173,500	Bobby & Jack (1)	122,000	Rebecca (3)	25,300
235,500	Bois Bubert (4)	25,000	Rebecca II (1)	8,500
276,200	Cathy-Aldie (1)	5,400	St. George (2)	252,000
153,700	Challenger (4)	17,900	St. Joseph (2)	13,900
151,300	Courier (3)	520,000	St. Michael (2)	5,500
182,600	Crescent (2)	14,200	Sea Queen (1)	90,000
26,200	Dorchester (2)	305,000	Surfman (8)	80,300
106,400	Dorothy & Ethel (3)	56,700	Theresa R. (3)	339,000
320,900	Elmor & Jean (4)	198,000	Vagabond (1)	80,000
183,400	Frances R. (1)	50,000	Vandal (3)	195,000
218,500	Gloucester (1)	205,000	Vida E. II (8)	63,800
276,300	Gulf Stream (1)	200,000	Voyager (3)	144,000
51,200	Helen S. (1)	2,000	Wawenock (1)	257,000
62,000	Marie H. (1)	2,000	Winthrop (2)	375,000
101,000	Mary & Helen (4)	12,800		

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19,000	Angenette (1)	2,300	Judy Sue (6)	44,300
7,900	Arnold (5)	54,300	Kathy Dick (4)	10,800
16,700	Bernie (5)	38,400	Little Jeff (2)	3,700
4,400	Cap'n Bill II (2)	84,000	Little Lady (1)	400
114,800	Cap'n Bill III (1)	59,600	Lynn (1)	5,700
135,000	Carole Ann (3)	26,100	Madeline (4)	29,900
235,800	Clifton (2)	1,400	Morning Star (4)	6,400
138,000	Clinton (1)	4,400	Nellie M. Stanley (1)	5,500
52,700	Curlew (2)	10,400	Phyllis J. (1)	12,000
155,300	Damless (2)	39,000	Reliance (4)	12,800
79,700	Dorothy & Mary (3)	52,800	Southern Cross (3)	24,000
270,200	Driftwood (4)	15,500	Sunapee (1)	18,200
204,800	Falcon (1)	6,600	Three Bells (4)	36,900
79,000	Frankie & Jeanne (4)	21,200	Trina Lea (1)	1,700
309,400	Gertrude D. (1)	4,200	Viking (5)	18,400
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Sudbury Laboratory, South Sudbury, Mass.

RADAR

Bendix Aviation Corp., Pacific Div., 475 Fifth Ave., New York 17, N. Y.

Decca Radar Inc., 539 West 25th St., New York 1, N. Y.

Edo Corporation, College Point, L. I., N. Y.

Lavoie Laboratories, Inc., Morgantown 16, N. J.

Radiomarine Products, a Division of RCA, 75 Varick St., New York 13, N. Y.

RADIO MONITORS

Sesco, Inc., 47 Nichols Ave., Friday Harbor, Wash.

RADIO TELEPHONES

Applied Electronics Co., Inc., 213 E. Grand Ave., South San Francisco, Calif.

Bludworth Marine, 1500 Main Ave., Clifton, N. J.

Hudson American—Div. of Vocaline Company of America, Inc., Old Saybrook, Conn.
Kaar Engineering Corp., 2915 Middlefield Rd., Palo Alto, Calif.

Radiomarine Products, a Division of RCA, 75 Varick St., New York 13, N. Y.

RANGES—Golley

"Shipmate"—Shipmate Stove Division, Souderton, Pa.

"Shipmate" and "Webbperfection"—Elisha Webb & Son Co., 136 S. Front St., Philadelphia 6, Pa.

Harry C. Weiskittel Co., Inc., 4901 Pulaski Highway, Baltimore 24, Md.

REDUCTION GEARS

Auto Engine Works, Inc., 333 (A) North Hamline Ave., St. Paul 4, Minn.

Paragon Gear Works, Inc., 628 Cushman St., Taunton, Mass.

Snow-Nabstedt Gear Corp., Welton St., Hamden, Conn.

Twin Disc Clutch Co., 1341 Racine St., Racine, Wis.

The Walter Machine Co., Inc., 84 Cambridge Ave., Jersey City 7, N. J.

RUST PREVENTIVES

Sudbury Laboratory, South Sudbury, Mass.

SEARCHLIGHTS

The Carlisle & Finch Co., 4562 W. Mitchell Ave., Cincinnati 32, Ohio

SHIPBUILDERS

Blount Marine Corp., Warren, Rhode Island.

Diesel Engine Sales Inc., St. Augustine, Fla.
Diesel Engine Sales of Ft. Myers, Fla., Inc., 2909 Frierson, Ft. Myers, Fla.

Harvey F. Gamage, So. Bristol, Maine.

Gladding-Hearn Shipbuilding Corp., 1 Riverside Ave., Somerset, Mass.

Story Marine Railway, 257 Front St., So. Portland, Me.

SILENCERS

The Maxim Silencer Co., 126 Homestead Ave., Hartford, Conn.

STARTING FLUID

Spray Products Corp., P. O. Box 844, Camden 1, N. J.

STERN BEARINGS

Byron Jackson Tools, Inc., 1900 E. 65th St., Los Angeles 1, Calif.

"Goodrich Cutless"—Lucian Q. Moffitt, Inc., Akron 8, Ohio.

TRAWL CABLE METERS

Olympic Instrument Laboratories, Vashon, Wash.

TWINE

Brownell & Co., Inc., Moodus, Conn.

Columbian Rope Co., Auburn, N. Y.

Ross-Matthews Corp., Box 1110, Fall River, Mass.

VOLTAGE REGULATORS

Safety Industries, Inc., Box 904, New Haven 4, Conn.

WINCHES

Hancock Marine, 1567 No. Main St., Fall River, Mass.

Hathaway Machinery Co., Inc., New Bedford, Mass.

Stroudsburg Engine Works, 62 North 3rd St., Stroudsburg, Penn.

WIRE ROPE

American Steel & Wire Division, United States Steel, Rockefeller Bldg., 614 Superior Ave., Cleveland 13, Ohio.

Hackensack Cable Corp., 110 Orchard St., Hackensack, N. J.

John A. Roebling's Sons Corp., Trenton 2, N. J.

Wickwire Spencer Steel Division of The Colorado Fuel & Iron Corp., Palmer, Mass.

FOREIGN BAILINGS

NAVIGATION ON ELECTRIC wire placed on the bottom of the sea was demonstrated recently in the sound between Sweden and Denmark by two Swedish inventors.

An electric wire, in the form of a triangular track, was laid at the bottom of the sound and the navigator of a motor boat followed the wire with the assistance of an oscilloscope. The navigator operated in a closed room and had no view in any direction.

When a vessel with an oscilloscope is above the electric wire, an arrow on the instrument points straight down. Should the vessel deviate from the wire, for example to the starboard, the arrow will point to the port side, and vice versa.

The system is claimed to be useful in narrow channels and ports as well as in darkness or fog.

HELICOPTERS IN AUSTRALIA

may soon be used as delivery vans for shrimp, from the Rockhampton grounds off Queensland. Under a plan now being worked out, a helicopter will be sent to the shrimp fleet in Keppel Bay to pick up catches from boats for immediate delivery to markets.

Hovering over the trawlers, the helicopter will haul the baskets of shrimp up from the boats on a winch-powered cable and hook. The helicopters would also take supplies to the shrimpers to enable them to stay at sea for weeks at a time.

A JAPANESE SALMON quota for the Northwest Pacific of 90,000 tons, for this year, was proposed by Japan at the 38th session of the Japan-Soviet Northwest Pacific Fisheries

Commission in Tokyo. The Japanese also proposed a quota of 80,000 for 1960.

Originally she had asked for 160,000 tons to be gradually scaled down to 110,000. Russia has been insisting that the quota be 70,000 tons. Late reports say Japan was allowed a total of 85,000 tons for the coming season.

Japan decided to scale down her request in order to avoid prolonged negotiations because the salmon fishing season is scheduled to start.

SOVIET RESEARCH SUBMARINE,

The Northerner, returned from a successful 24-day scientific cruise, early this year, after covering 4,000 miles. This was the submarine's second trip, the first being her maiden voyage in the Barents sea following trials. Manning the vessel were scientists from the U.S.S.R. Institute of Marine Fisheries and Oceanography.

The trip established at what time of day or night and at what depth various fish are most likely to be located. It was ascertained that at night the herring were in a passive state and did not react in any way to the advance of the vessel nor to the glare of her lights.

The sub is equipped with underwater television for research directly over head; echo sounders operating upwards and downwards; instruments for taking exact measurements of salinity, illumination, temperature, rate of flow, and the percentage of oxygen dissolved in seawater. Instruments incorporate all the latest techniques in radio and electrical engineering making for completeness and efficiency.

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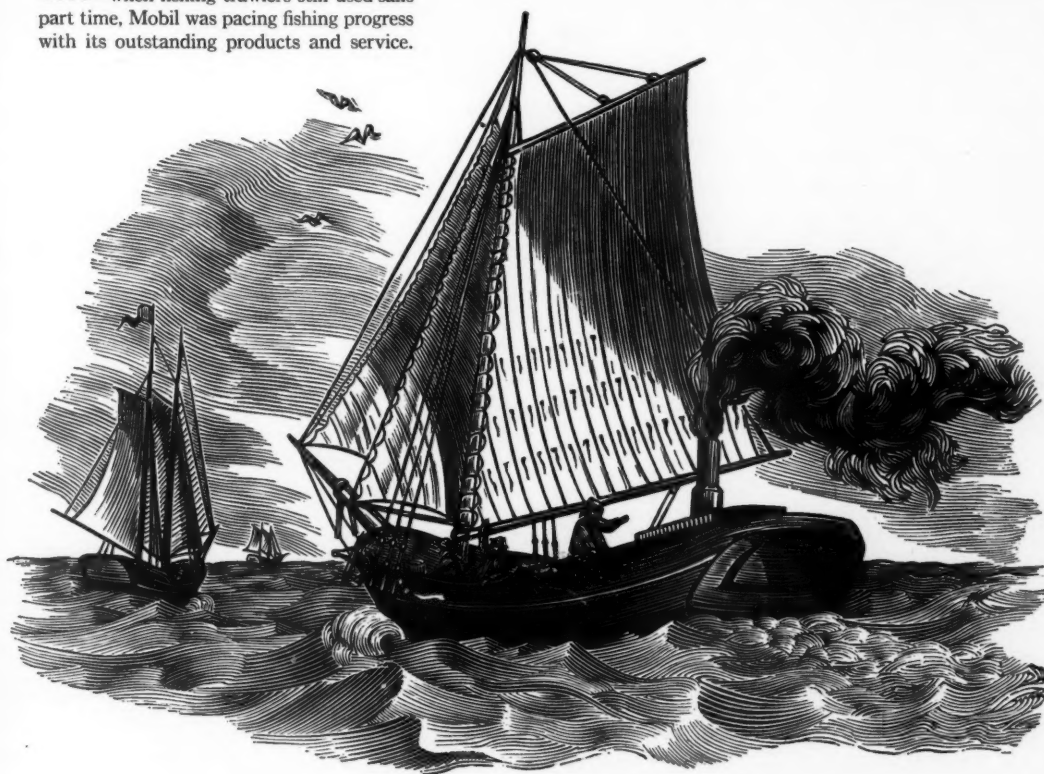
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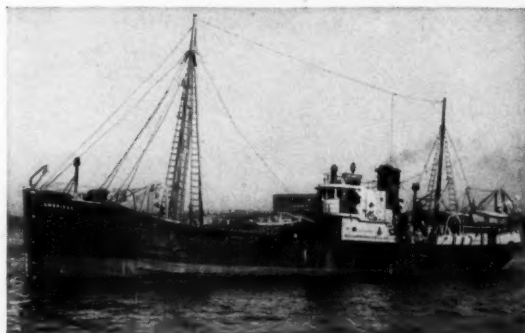
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